1992 CRB Commodity Year Book

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INTRODUCTION

Commodity prices declined in 1991, and the 21-market CRB Futures Index lost 6.5 percent of its value during the year. The 23-component CRB Spot Index, which reflects current prices, dropped by 7.7 percent. In comparison, the Producer Price Index for the U.S. was unchanged, while the Consumer Price Index rose by 3 percent from the previous year.

In a recessionary economic climate, trading in the U.S. futures markets fell in 1991 for the first time in a number of years. Total volume was 262.9 million contracts, 5 percent below the 1990 level and slightly under 1989's total. Interest-rate futures accounted for 46 percent of all futures trading in 1991. Yet, trading in interest-rate contracts slowed, declining by nearly 3 percent.

The agricultural commodities comprised about 20 percent of all trading. Here, too, volume was lower, shrinking 8.5 percent from the 1990 level. The energy markets contributed another 13 percent of all futures volume. Trading in the energy contracts was 5 percent below 1990's total. Foreign currency futures accounted for 11 percent of all volume, and trading was down by less than one percent from the previous year.

Stock indices constituted nearly 6 percent of futures activity in 1991, and volume rose slightly. Equity futures were the only group to show an in increase in volume in 1991. Precious metals comprised 4.5 percent of the year's futures trading and were the biggest loser in volume terms, with a 20 percent decline.

The most heavily traded futures contracts in the U.S. were Treasury bonds, Eurodollars, crude oil, the S&P 500 Index, the Deutsche mark, corn, and soybeans. T-bonds provided 26 percent of all futures trading in the U.S. in 1991, and Eurodollars accounted for 14 percent.

The U.S. economy remained in recession in early 1991, and uncertainty surrounding the Gulf war kept investment plans and consumer spending on hold. Real GNP in the first quarter of the year was down 2.8 percent annualized. Growth was positive in the second and third quarters, but slowed in the fourth quarter. Real GNP grew by only 0.2 percent for the year. Most observers believed that the economy came out of recession in May 1991, though the ensuing recovery was very sluggish, particularly late in the year.

Industrial production was quite weak in 1991, rising a meager 0.6 percent. Durable goods orders fell by 2.1 percent, while durable goods shipments increased slightly. Construction spending fell 4.5 percent in a rough year for that industry. Housing starts were slow at the beginning of 1991, but picked up some in the second half. Auto sales, off sharply, accelerated in June and July, but then fell again. Retail sales in 1991 were up less than 1 percent in nominal terms, but were down 0.6 percent in real terms.

The unemployment rate rose from 6.2 percent in January 1991 to 7.1 percent at the end of the year. Personal income expanded by only 2.8 percent over the period.

The 1992 year book contains three feature articles, beginning with "Japanese Candlestick Charting," by Steve Nison. Descriptions of candlestick patterns and how they can be utilized effectively in technical analysis are the focus of discussion. Portions of the article are from Mr. Nison's book, *Japanese Candlestick Charting Techniques*, published by Simon and Schuster. He has also written numerous articles on candles and has spoken on the subject at organizations around the globe, including the World Bank in Washington, D.C. The author is vice president and senior technical analyst at Merrill Lynch in New York and is an instructor at the New York Institute of Finance.

"The Structure and Impact of the 1990 Farm Bill," by Richard Loewy, examines the goals and subsequent achievements of the 1985 Farm Bill and the objectives of the 1990 legislation. The author is president of AgResource Company, an independent research and statistical firm based in Chicago, serving farmers, elevators, millers, processors, grain companies and exporters. Mr. Loewy was previously senior grain and oilseeds analyst with Prudential Securities, where he was employed for nine years. He has also worked for Gulf and Western and the U.S. Department of State.

"Worldwide Importance of the Former USSR's Oil and Gas Production," by Peter C. Fusaro, looks at trends in the region's energy production, export policies, and oil trading, and at the outlook for the energy sector in the 1990s. The author is president of Global Change Associates, a New York consulting firm devoted to energy and environmental issues and management. An expert on price-risk management and on emerging trends that impact the energy industries, Mr. Fusaro's articles have appeared in a number of energy market publications.

We wish to express our appreciation for the assistance provided by government agencies, particularly the U.S. Department of Agriculture and the Bureau of Mines, and by the commodity exchanges and many trade organizations. We have attempted to list these institutions and organizations on page 4T.

The Editorial Board
March 1992

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American Petroleum Institute
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Chicago Mercantile Exchange
Citrus Associates of the N.Y. Cotton Exchange
Coffee, Sugar & Cocoa Exchange
Commodity Exchange, N.Y.
Commodity Futures Trading Commission
Edison Electric Institute
F.W. Dodge Corp.
Federal Power Commission
Federal Reserve Board
Florida Department of Citrus
Futures Industry Association
General Services Administration
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Gold Fields Mineral Services Ltd.
Handy & Harman
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International Monetary Market (Chicago)
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U.S. Department of Commerce
U.S. Department of Energy
U.S. Department of the Interior
U.S. Department of Labor
U.S. Department of the Treasury
The Wall Street Journal
Winnipeg Commodity Exchange
Wool Services Co.
Zinc Institute

The 1992 year book is dedicated to Seymour Gaylinn, who retired in December 1991, following a distinguished 45-year career at the Commodity Research Bureau. As Senior Statistician and head of the chart room for many years, Seymour has been an authority on historic market information, responding to a steady stream of inquiries from exchanges, brokerage firms and reporters. A respected tutor and coach to many, he will be greatly missed by all his colleagues at the CRB and by a great number of people across the industry.

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COMMODITY DATA

THE COMMODITY PRICE TREND

Commodity prices deteriorated in 1991, and the 21-market CRB Futures Index ended 1991 at 208.08, down 6.5 percent on the year. The livestock group lost 23 percent of its value, while the precious metals, industrials, oilseeds, and soft commodities were lower. The only gainers were the grains and the miscellaneous group.

Industrials - The industrials group retreated by 12 percent, falling to a five-year low in late 1991. Crude oil, rallying to nearly $33/bbl. in January on worries about disrupted Persian Gulf supplies, retreated after the war. Oil prices advanced again in the fall with uncertainty about Soviet shipments, but then slumped towards year-end because of mild winter weather and heavy pumping by Saudi Arabia and others.

Copper started the year on a strong note at $1.20 a pound; however, sluggish manufacturing activity in the industrialized nations kept a lid on demand and prices ended the year at around 97 cents a pound.

With tight U.S. supplies, cotton futures had a strong rally in the spring and reached an 11-year high of 94 cents a pound. Later, the market tumbled as U.S. farmers responded to high prices by planting more cotton, and fall's domestic crop of 18 million bales turned out to be the largest since 1937.

Lumber prices rallied to an 8-year high mid-year, as a result of logging restrictions in the Pacific Northwest to protect the spotted owl. The market then gave back some gains because of soft construction activity.

Precious Metals - The precious metals group was 12 percent lower on the year. War in the Persian Gulf and political transition in the USSR had a relatively mild impact on precious metals, as investors turned to other trading vehicles, such as currencies. A subdued rate of inflation, running about 3 percent annualized for U.S. consumers, versus 5.5 percent in 1990, dampened enthusiasm for gold, which slumped to a 5-year low in September. The dollar's weakness in the second half of the year (tied to cuts in U.S. interest rates) was supportive for gold prices, as was evidence that Soviet gold inventories were lower than had been believed.

Platinum futures fell to a 6-year low with weakness in the U.S. auto sector, underscored by General Motors' announcement in December that it would shut plants and eliminate many jobs.

Silver futures, plagued by large inventories and tepid investor demand, fell to $3.50 an ounce early in the year, the lowest since 1974.

Grains - The grains group was the best performer in 1991, rising by nearly 15 percent and led by wheat. Beginning the year at around $2.60 a bushel, nearby wheat futures ended 1991 at $4.05, boosted by a small U.S. wheat crop, projected low inventories, and active sales to the Soviets under U.S. export programs.

Corn prices traded mostly sideways, but ended the year a little higher. A smaller domestic corn crop, good sales to the Soviets, and U.S. farmers' reluctance to sell corn were the chief supportive factors.

Oilseeds - The oilseeds were down nearly 13 percent on the year. Soybean futures declined midyear, but ended 1991 unchanged, supported by sales of beans and products to the USSR under concessional financing. Soyoil values eroded in 1991, as U.S. exports slumped and supplies were more than ample.

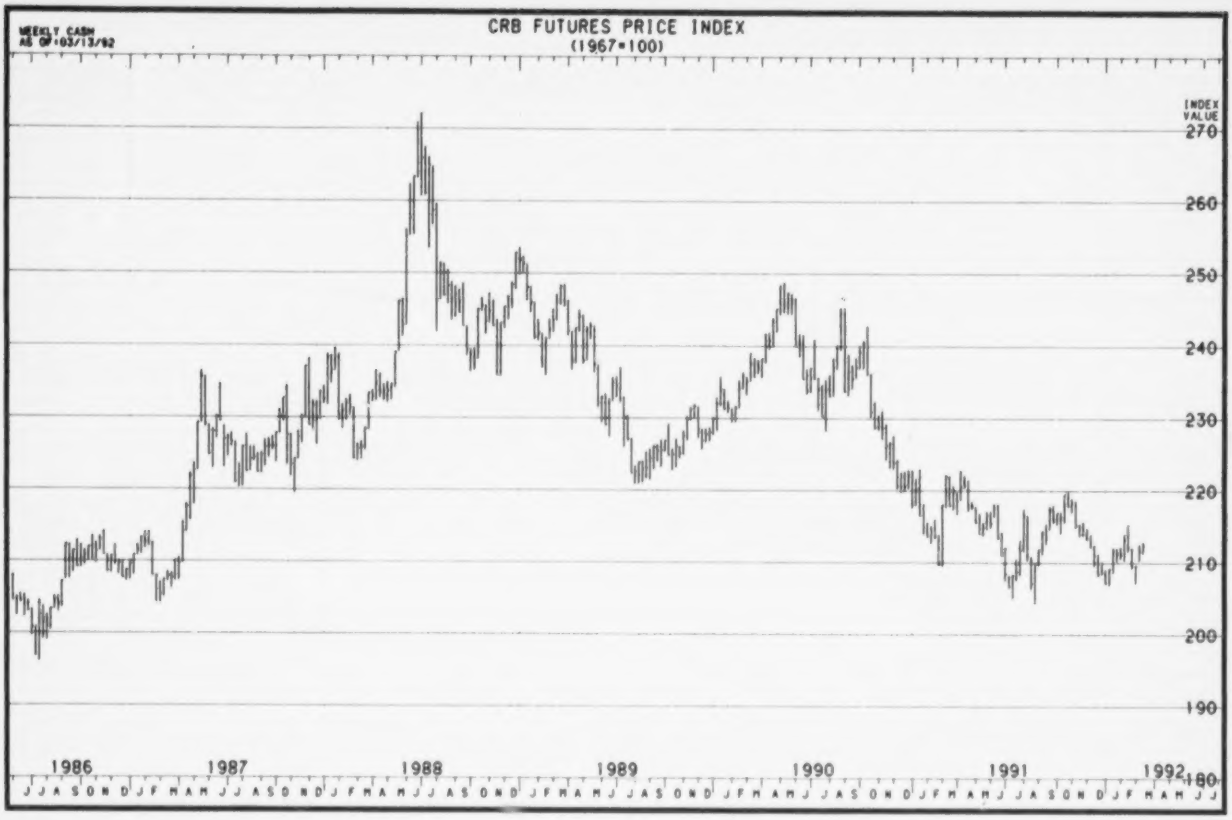
Livestock - The livestock group was strong in early 1991, only to plunge later. The live cattle market slumped to a 3-year low midyear on sluggish demand, ample availability of competing meats, and expectations that beef supplies would increase. Prices advanced in the fall, but then fell back again as overall meat supplies remained large.

Hog and belly futures retreated during 1991, and by December were at the lowest levels in over two years because of burdensome levels of fresh and frozen pork products.

Imported - The imported group declined by 4 percent in 1991, as coffee prices fell to a 2-year low with large stocks in producing and consuming countries. Nearby sugar futures pivoted around 8.5-9 cents a pound for much of the year; world production and consumption of sugar were nearly in balance, and reduced Soviet buying limited the upside for prices.

Cocoa futures, slumping to an 18-year low midyear, advanced in second-half 1991 on forecasts for smaller African and Brazilian crops in 1991/92 and the first production deficit in eight seasons.

Miscellaneous - This group gained by 9 percent in 1991, as FCOJ futures soared, following USDA's October estimate showing a smaller-than-expected Florida orange crop.



Monthly CRB Futures Price Index (High, Low & Close 1967 = 100)

Year		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Range
1984	High	278.3	276.1	283.0	283.2	284.2	280.3	268.3	259.8	256.3	254.8	258.7	253.2	284.2
	Low	273.2	266.1	274.7	275.1	275.3	268.4	249.4	253.3	250.3	252.0	252.7	244.0	244.0
	Close	273.6	272.5	283.0	275.1	280.1	271.0	249.4	257.1	251.4	254.8	253.8	244.2	—
1985	High	247.9	248.1	245.2	247.1	239.7	233.8	228.0	221.7	224.5	225.6	227.7	231.1	248.1
	Low	241.7	236.6	238.2	239.3	230.9	226.6	219.3	217.7	217.2	221.9	223.8	227.6	217.2
	Close	247.1	238.2	244.4	239.3	232.3	226.6	220.7	219.7	222.9	225.6	227.7	229.2	—
1986	High	231.1	216.6	216.5	213.5	216.1	205.7	203.7	207.1	212.3	213.4	213.3	212.0	231.1
	Low	219.9	209.9	209.4	203.0	205.5	201.6	196.9	201.0	208.2	209.7	208.4	207.5	196.9
	Close	219.9	209.9	209.6	213.5	205.5	201.6	200.1	207.1	210.9	211.3	210.7	209.1	—
1987	High	213.9	213.7	210.1	221.7	235.6	234.6	227.8	226.8	227.3	232.7	237.1	234.7	237.1
	Low	208.3	204.2	205.7	209.4	222.6	223.1	220.7	222.4	223.5	222.7	221.1	227.5	204.2
	Close	212.6	205.4	208.7	221.7	224.9	225.9	225.9	223.0	223.8	223.4	234.6	232.5	—
1988	High	239.3	232.9	233.5	236.0	248.4	270.5	265.8	251.0	248.6	246.5	247.0	252.8	270.5
	Low	230.4	224.3	224.5	232.7	232.5	249.8	242.0	243.7	237.1	237.6	236.0	244.1	224.3
	Close	230.4	225.7	233.0	234.4	248.4	265.1	246.2	246.2	238.8	243.9	244.9	251.8	—
1989	High	251.6	243.3	248.1	244.6	242.8	235.4	237.0	225.5	226.8	228.1	231.7	229.9	251.6
	Low	241.1	236.6	241.7	237.7	229.4	227.9	221.2	221.5	222.9	223.0	226.0	225.6	221.2
	Close	242.4	243.2	242.1	238.0	229.4	234.4	221.2	225.5	226.8	225.7	228.8	229.9	—
1990	High	235.1	236.3	239.0	245.8	247.8	241.2	240.0	244.7	239.8	242.0	231.1	223.8	247.8
	Low	228.8	229.9	234.2	238.4	241.5	233.8	230.3	233.1	234.9	228.6	223.2	220.1	220.1
	Close	229.9	234.6	238.2	245.8	241.5	236.9	235.0	233.7	239.2	229.8	223.3	222.6	—
1991	High	222.8	215.6	221.8	222.2	217.0	217.7	214.1	216.5	217.6	219.8	218.6	213.9	222.8
	Low	214.1	209.7	217.3	216.2	214.1	208.4	205.9	204.7	211.9	216.2	213.3	207.2	204.7
	Close	214.1	215.6	218.5	216.2	215.4	208.4	214.1	211.8	215.6	218.2	213.3	208.1	—
1992	High	212.2	215.3	212.9										
	Low	206.9	207.2	210.2										
	Close	211.2	209.6	211.9										

Source: Commodity Research Bureau

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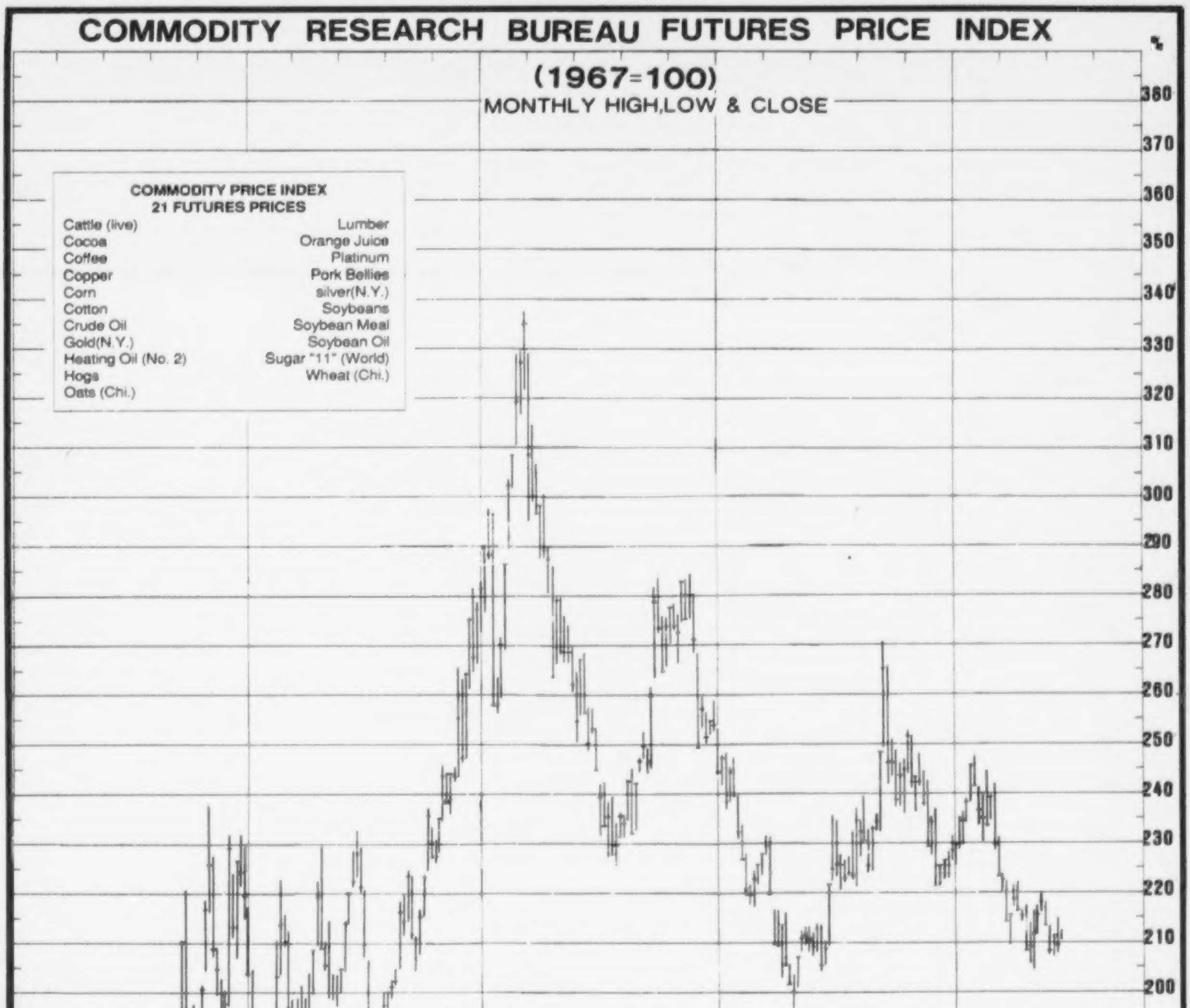
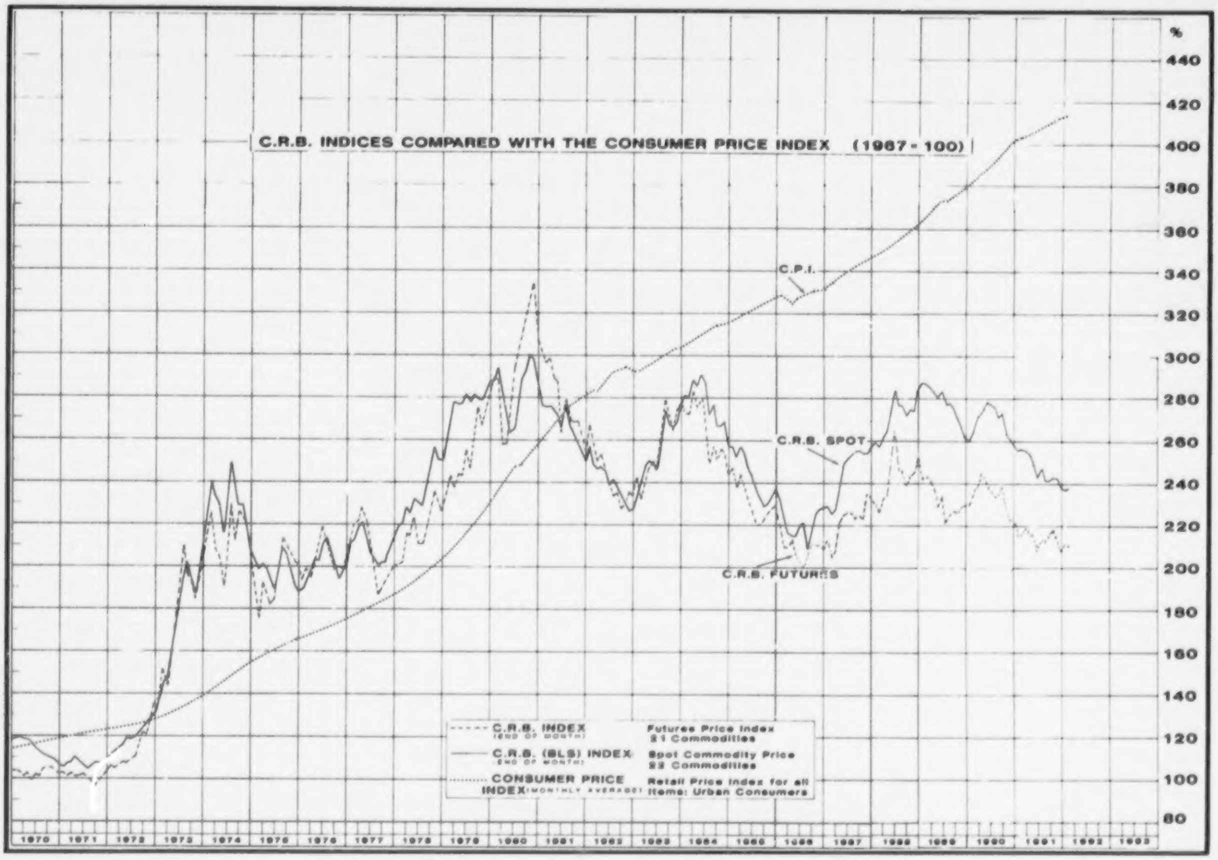


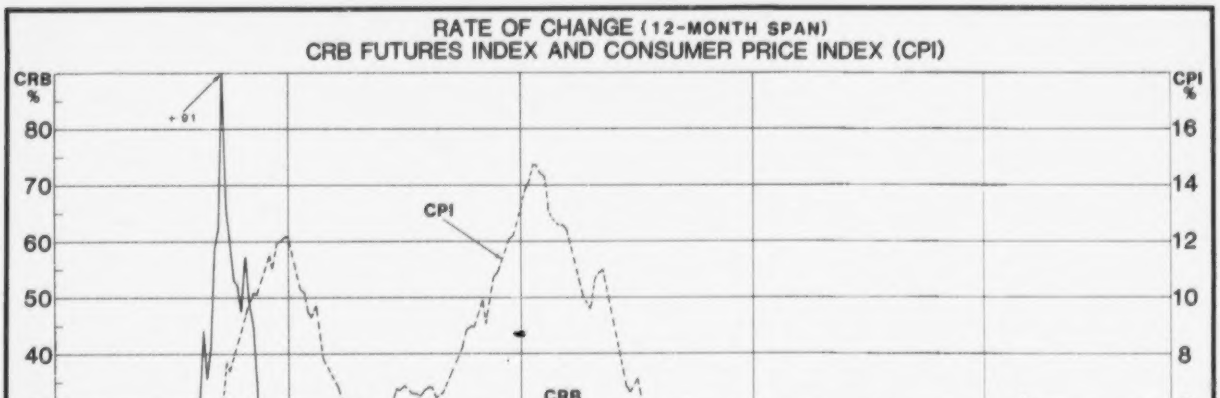
COMMODITY RESEARCH BUREAU FUTURES PRICE INDEX

(1967=100)

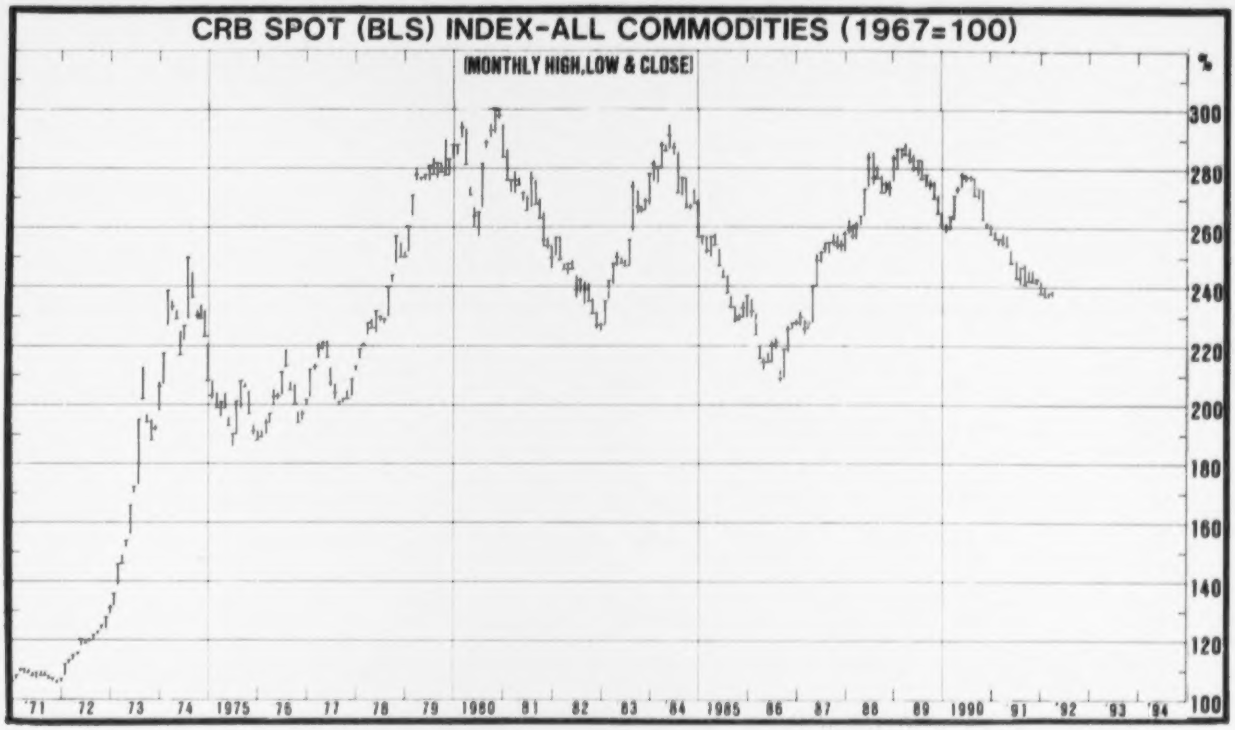
MONTHLY HIGH,LOW & CLOSE



C.R.B. INDICES COMPARED WITH THE CONSUMER PRICE INDEX (1967 = 100)



RATE OF CHANGE (12-MONTH SPAN)
CRB FUTURES INDEX AND CONSUMER PRICE INDEX (CPI)


CRB SPOT (BLS) INDEX-ALL COMMODITIES (1967=100)
(MONTHLY HIGH,LOW & CLOSE)
%
300
280
260
240
220
200
180
160
140
120
100
'71
72
73
74
1975
76
77
78
79
1980
81
82
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1990
91
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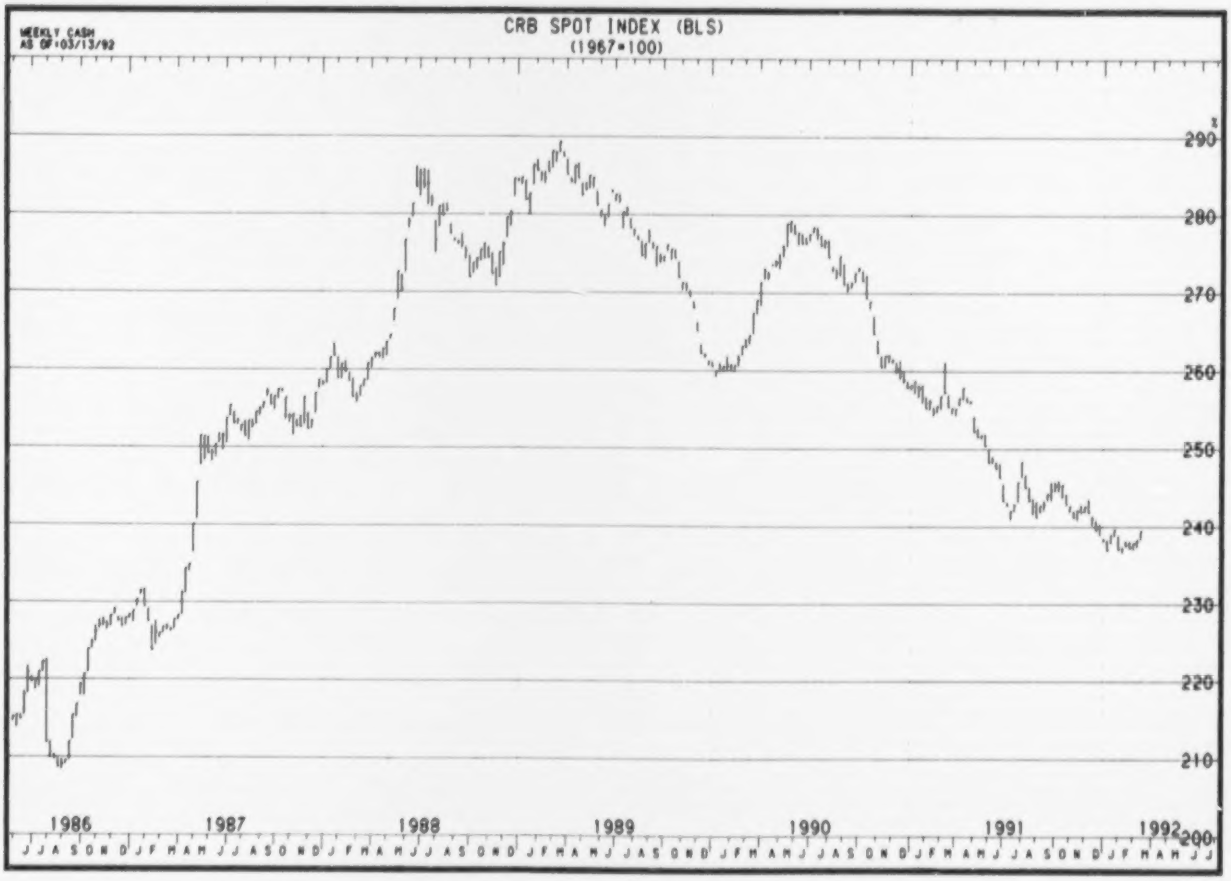
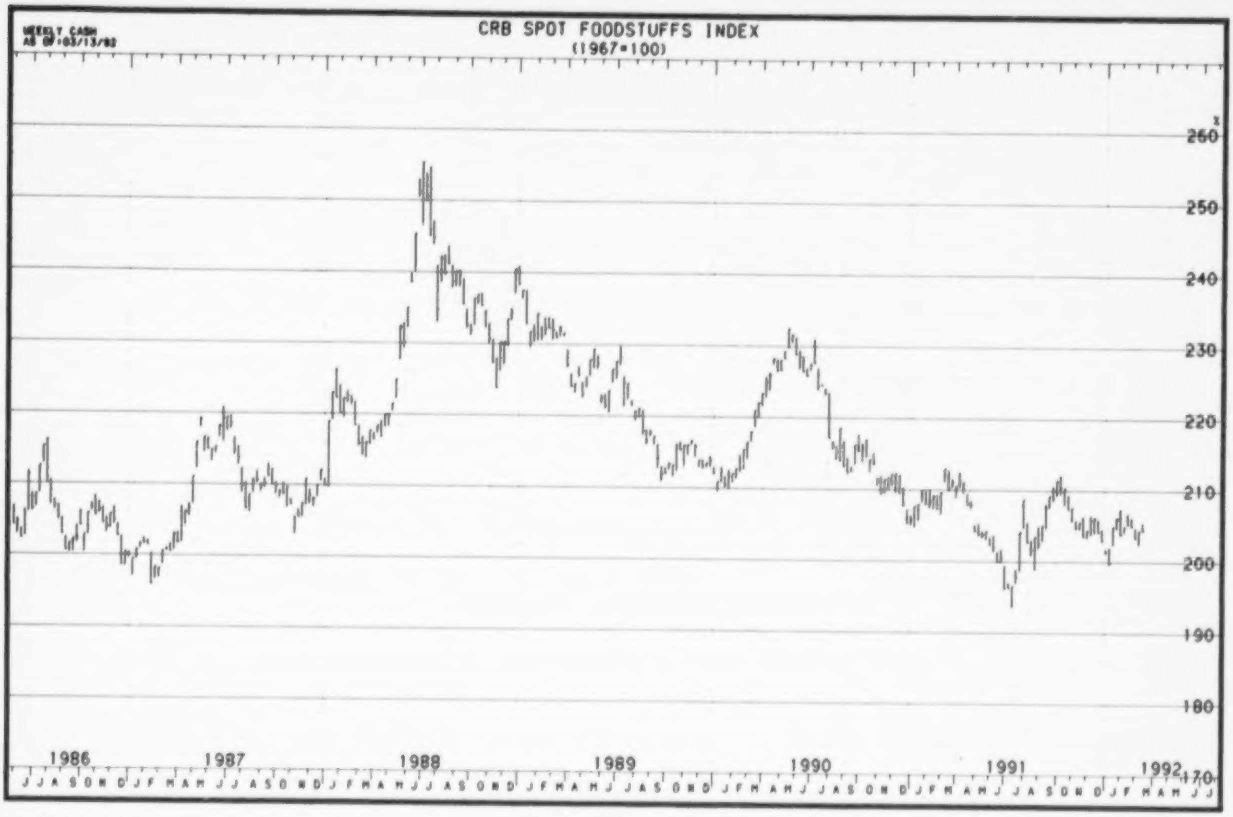
'93
'94


WEEKLY CASH
AS OF:03/13/92
CRB SPOT INDEX (BLS)
(1967=100)
%
290
280
270
260
250
240
230
220
210
200
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J


WEEKLY CASH
AS OF:03/13/92
CRB SPOT FOODSTUFFS INDEX
(1967=100)
%
260
250
240
230
220
210
200
190
180
170
1986
1987
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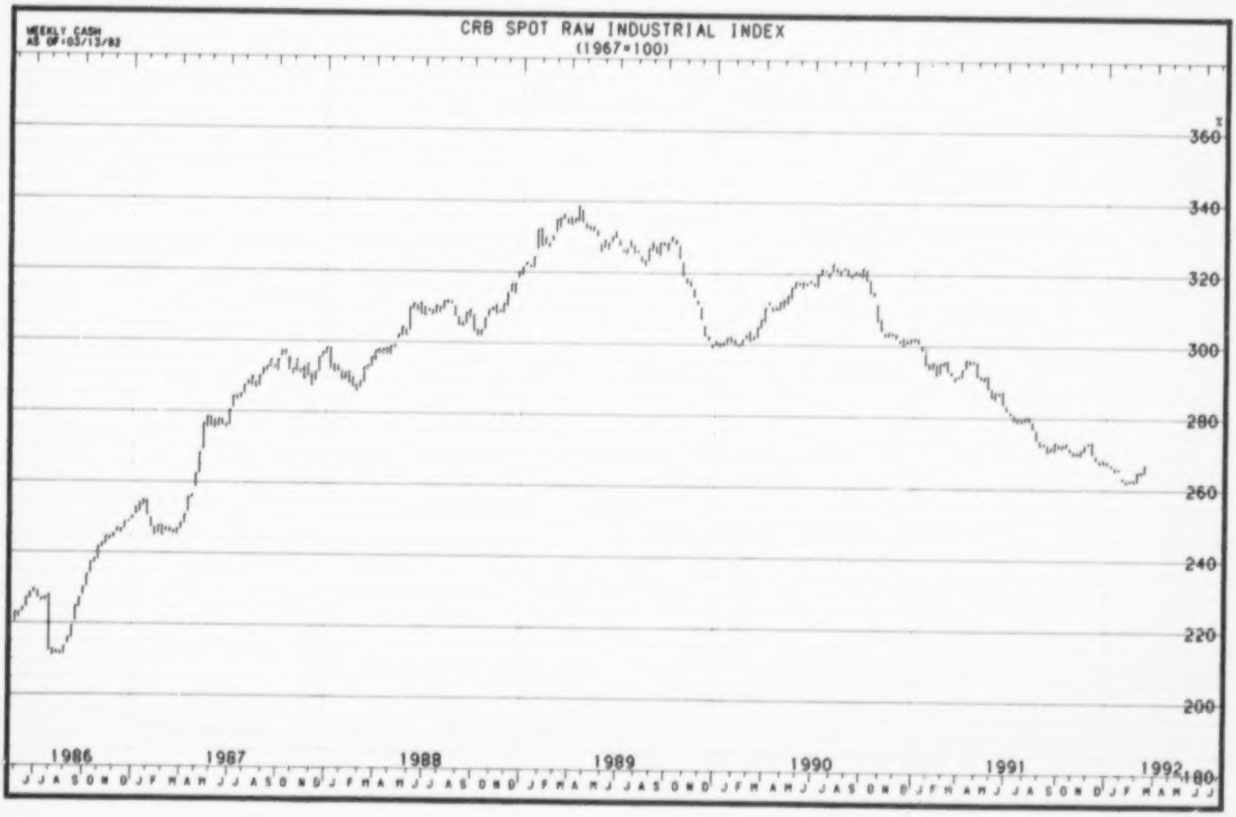
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY CASH
AS OF:03/13/92
CRB SPOT RAW INDUSTRIAL INDEX
(1967=100)
%
360
340
320
300
280
260
240
220
200
180
1986
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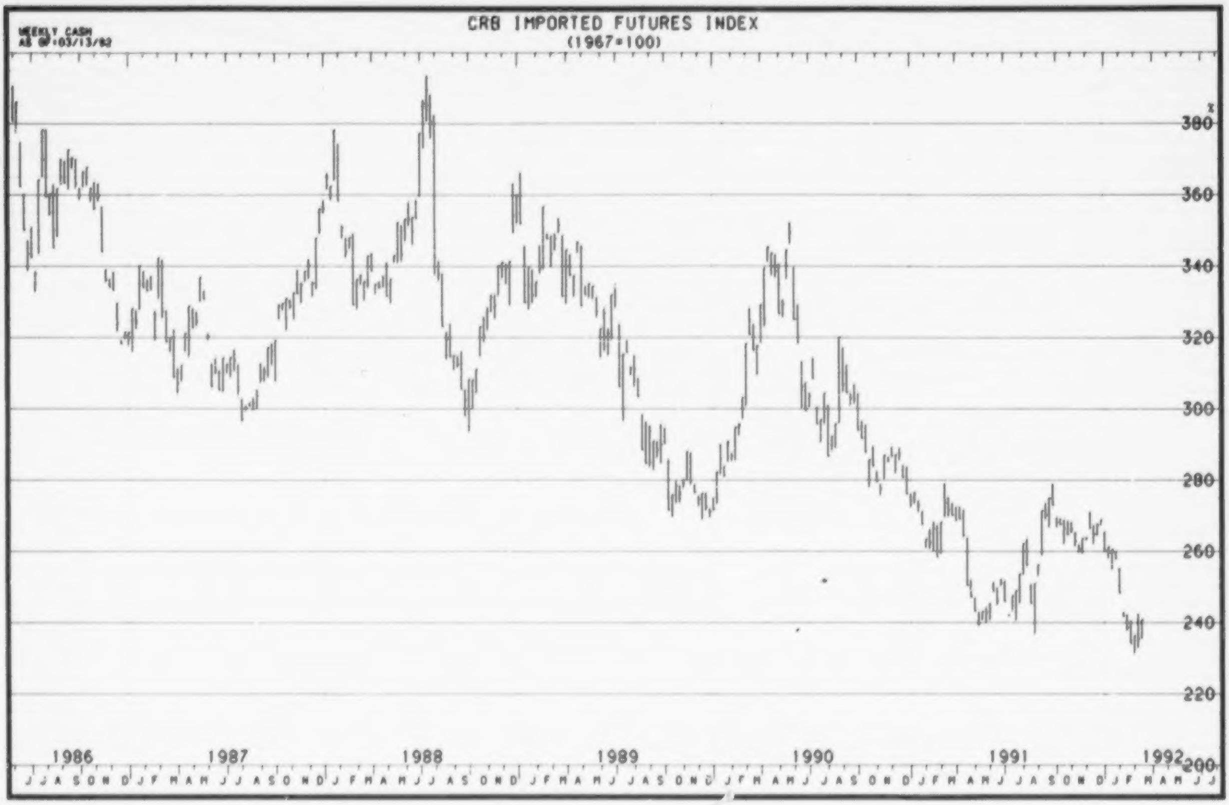
WEEKLY CASH
AS OF:03/13/92
CRB IMPORTED FUTURES INDEX
(1967=100)
%
380
360
340
320
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1986
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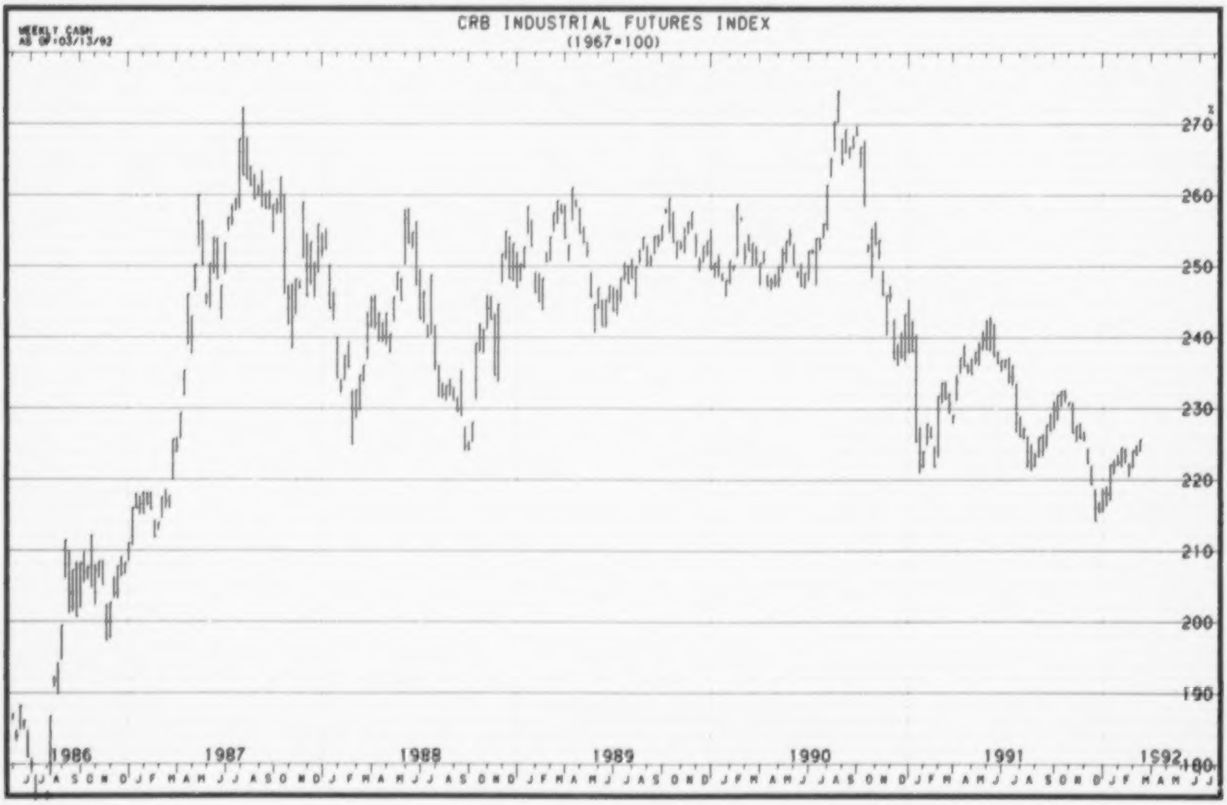
WEEKLY CASH
AS OF:03/13/92
CRB INDUSTRIAL FUTURES INDEX
(1967=100)
%
270
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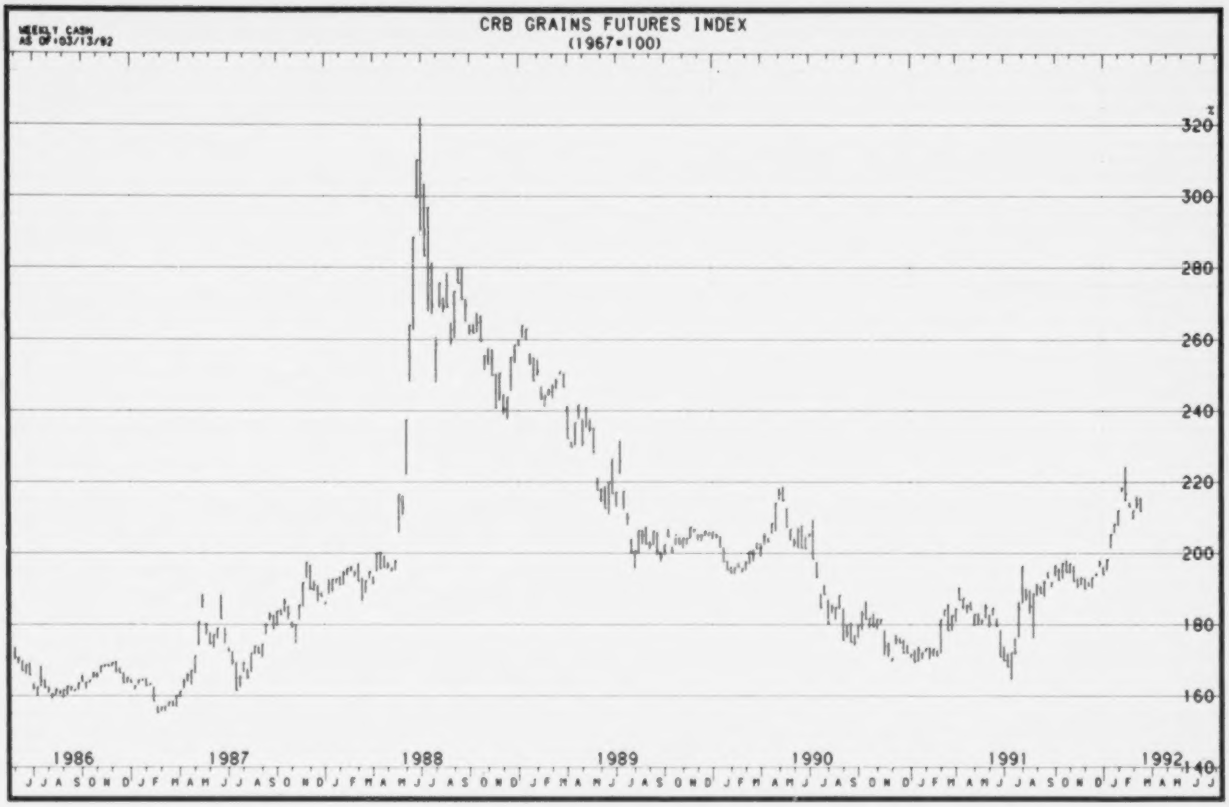
WEEKLY CASH
AS OF:03/13/92
CRB GRAINS FUTURES INDEX
(1967=100)
320
300
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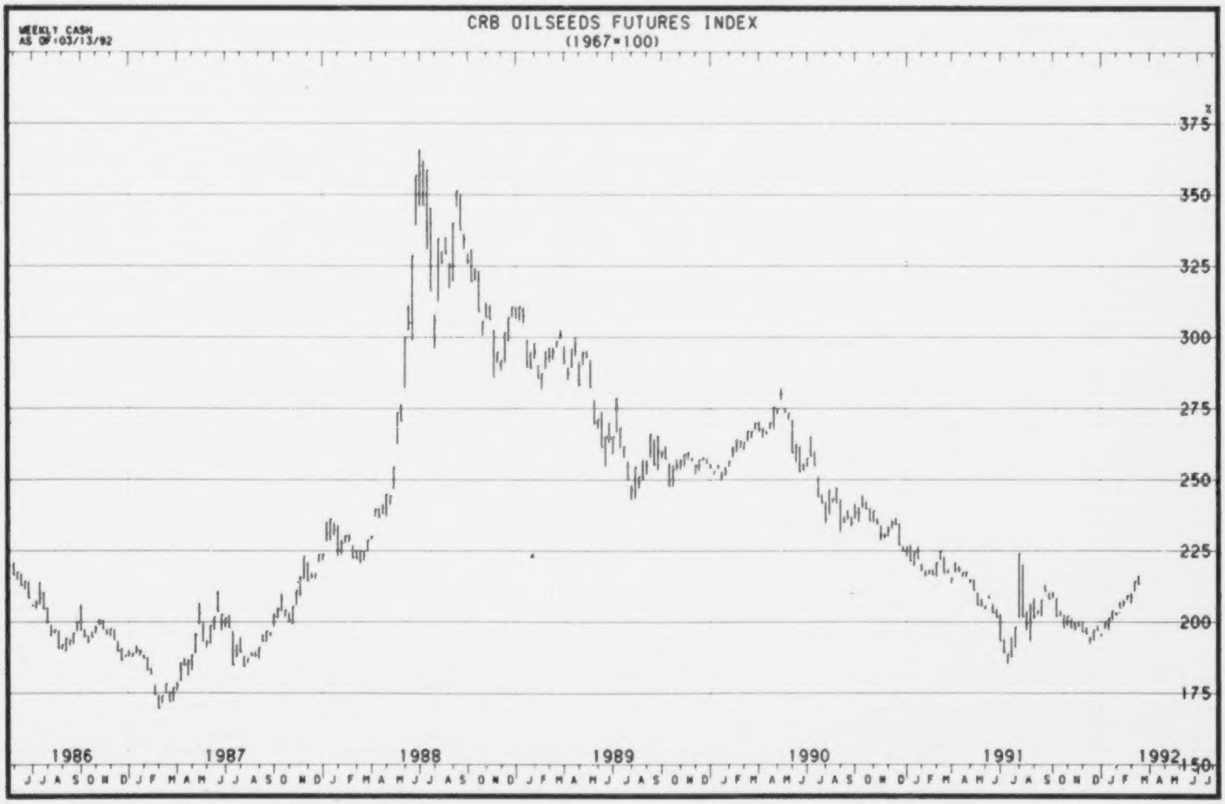
WEEKLY CASH
AS OF:03/13/92
CRB OILSEEDS FUTURES INDEX
(1967=100)
375
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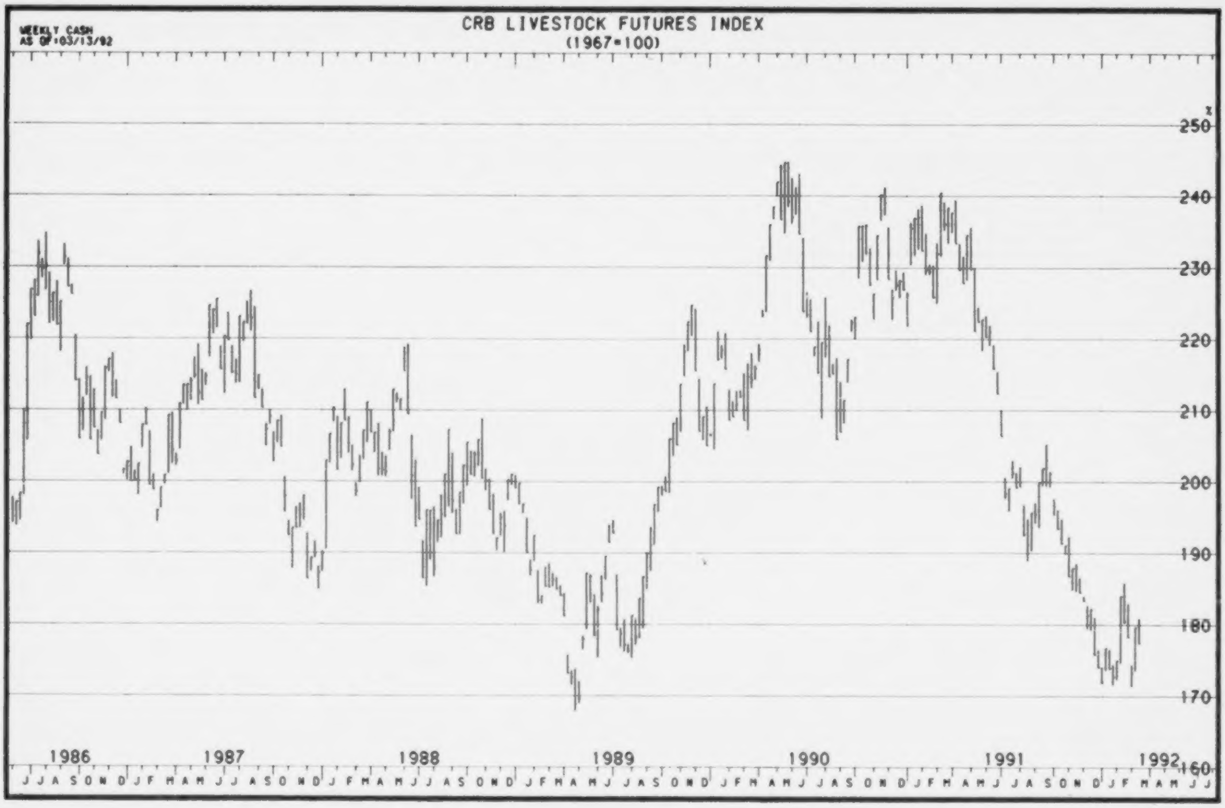
WEEKLY CASH
AS OF:03/13/92
CRB LIVESTOCK FUTURES INDEX
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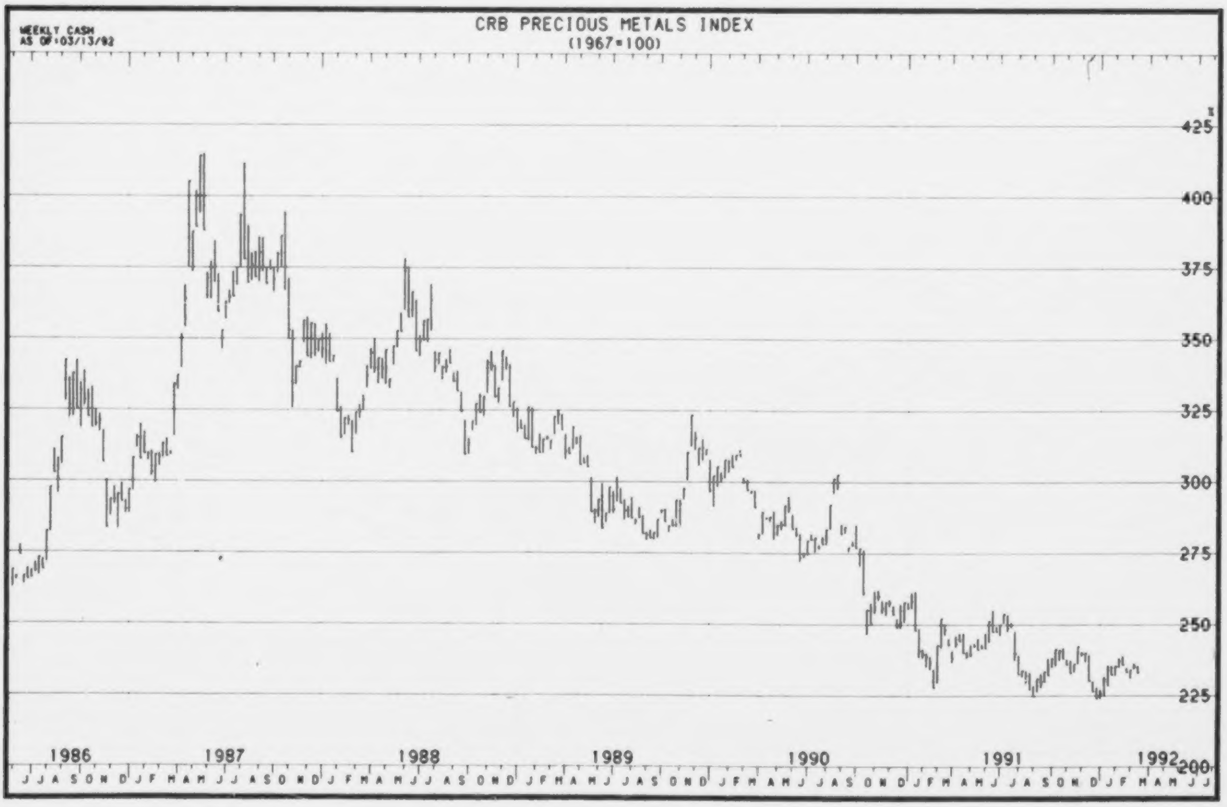
WEEKLY CASH
AS OF:03/13/92
CRB PRECIOUS METALS INDEX
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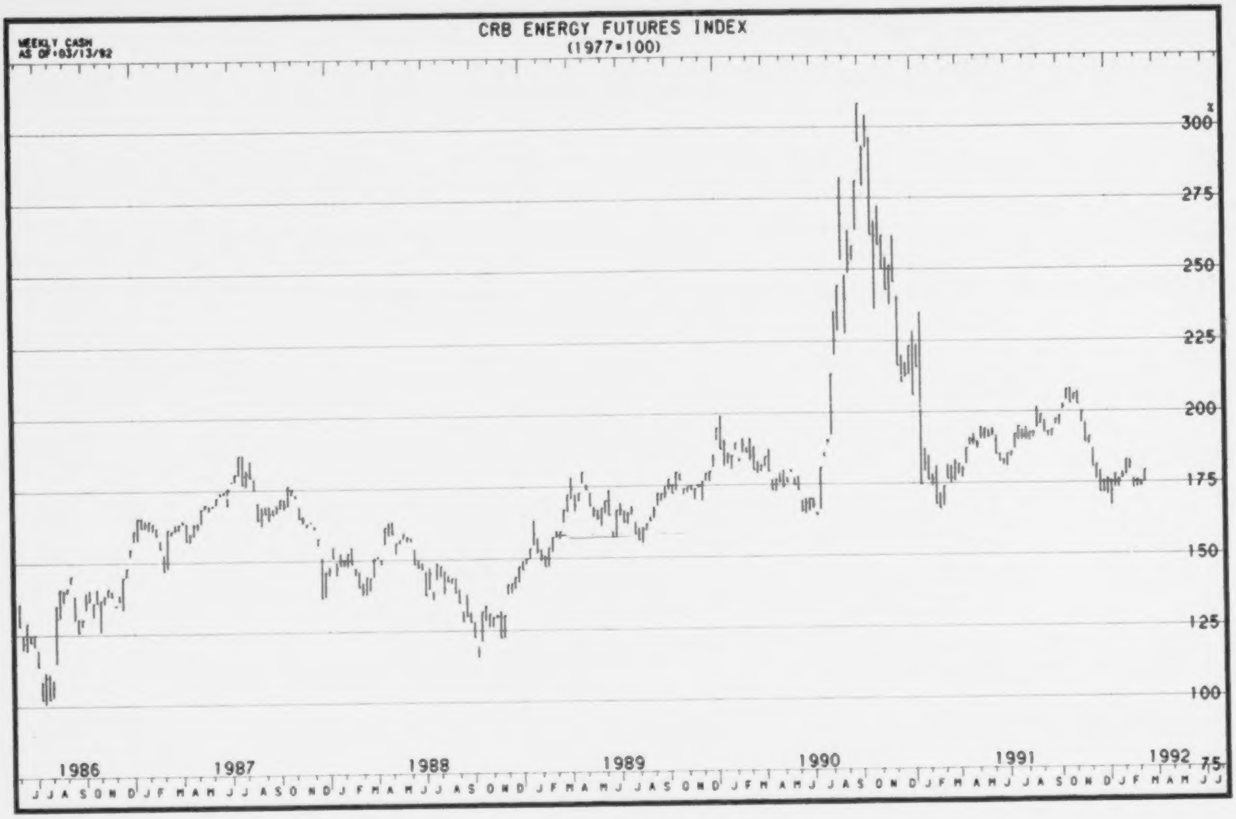
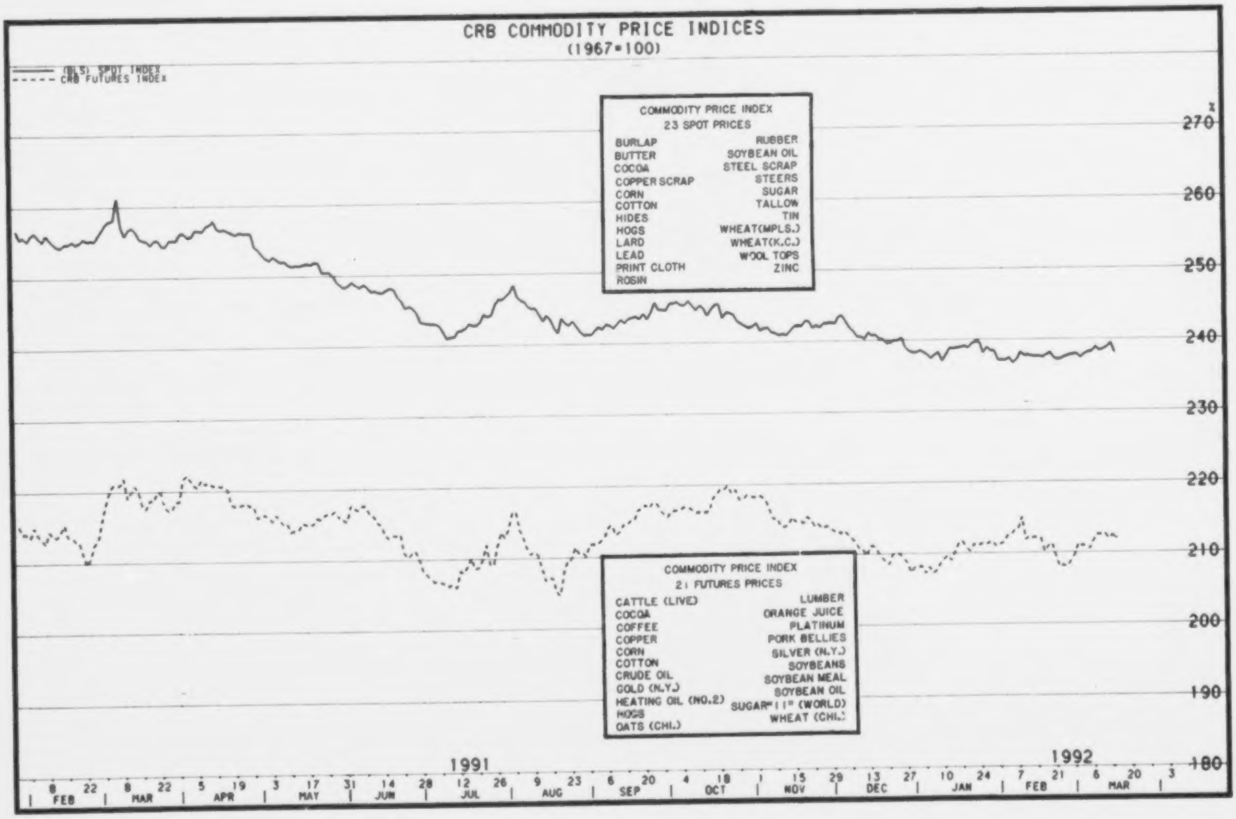
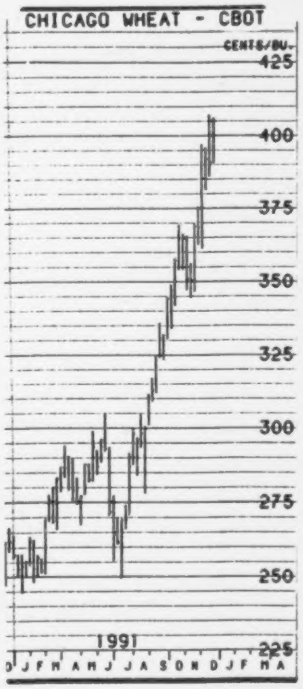


CRB ENERGY FUTURES INDEX
(1977=100)



CRB COMMODITY PRICE INDICES
(1967=100)

A LOT CAN HAPPEN IN 4 MONTHS!



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JAPANESE CANDLESTICK CHARTING

BY STEVE NISON

Introduction

In this article, I will discuss the background and practical applications of Japanese candlestick charting. Then I'll address some ways to meld the candlesticks with Western technical techniques.

Candlesticks are the traditional method of charting and technical analysis used in Japan. They have been used for nearly 100 years and, as such, are older than bar charts and point and figure charts. What is amazing is that this method of analysis, used for generations in the Far East, was virtually unknown to the West until I revealed it in my book, *Japanese Candlestick Charting Techniques.* In the years spent researching, analyzing and using them, I have discovered that the candles provide unique insights into the inner workings of the markets. I think you will as well.

With the groundswell of interest in candles, both here and abroad, and with many technical services now offering the candles to their clients, Japanese candlestick charts are joining bar charts and point and figure charts as a standard charting tool. Why have the flames of interest in the candles grown so bright? Let's look at some of the reasons:

1.) Candlestick charts are flexible. Users run the spectrum from first-time chartists to seasoned professionals. This is because candlestick charts can be used alone or combined with any other technical tool. Candlestick techniques can be used for speculation and for hedging, and they can be used for futures, equities, options--anywhere technical analysis is applied.

2.) Understanding candle charts may provide insights into how the Japanese view the markets. Anyone who has been in Japan or worked at a Japanese firm probably will have noted that almost all charts are in candle form. This is because the candlesticks are the traditional form of technical analysis for the Japanese. They use them to trade all the world's markets. The Japanese probably trade billions of dollars each day based on signals from their candlestick charts. Knowing how the Japanese view the markets with their technicals may help answer the question, "What are the Japanese going to do next?"

The Japanese use many Western technical tools. Now it is our turn to benefit from their knowledge. We now have access to a wealth of new technical information and can merge the East with the West.

3.) The colorful terms used to describe the candle patterns grab attention. If you heard the expression "hanging man line", wouldn't that spark your interest? The Japanese terminology give candlesticks a flavor all their own, and having gotten a taste, you will not be able to do without them.

4.) I believe the primary reason for the widespread attention to candlestick charts is that using them instead of bar charts is a win-win situation.

As we will discuss, the same data is required to draw the candlestick charts as that for the bar charts (open, high, low and close). This is important. It means that any of the technical analyses used with bar charts (such as moving averages, trendlines, Elliott Wave, retracements, etc.) can be employed with candlestick charts. In addition, there are some candle patterns that may allow you to get a jump on those who use traditional Western charting techniques. By employing candlestick charts instead of bar charts, you have the ability to use all the same analyses as you would with bar charts. But candlestick charts open avenues of analysis not available elsewhere.

The Basics

Constructing the Candlestick Lines

Exhibits 1, 2 and 3 show some candlestick lines. We'll use these to explain the construction of the individual candle lines.

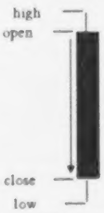


EXHIBIT 1

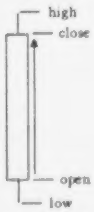


EXHIBIT 2

Doji Lines

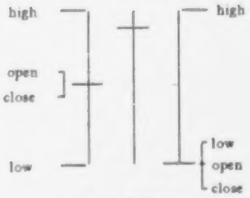


EXHIBIT 3

In Exhibits 1 and 2, we see there is a thick part of the candlestick line. This is called the real body. It represents the range between the session's open and close. When the real body is black (i.e. filled in) it means the close of the session was lower than the open. If the real body is white (i.e. empty), it means the close was higher than the open.

The thin lines above and below the real body are the shadows (these names are almost lyrical--the real body and the shadows of these real bodies). These shadows represent the session's price extremes. The shadow above the real body is called the upper shadow, and the shadow under the real body is the lower shadow. Accordingly, the peak of the upper shadow is the high of the session, and the bottom of the lower shadow is the low of the session. We see why these are named candlestick charts; the individual lines often look like candles with their wicks.

It's important to note that the candles can be for intra-day to monthly charts. Thus, for a 60-minute candle the open, high, low and close of the 60-minute period would be used for that candle line; for a daily chart it would be the open, high, low and close for the day. For the weekly chart, the candle would be based on Monday's opening, the high and low of the week, and Friday's close.

Exhibit 1 reflects a bearish period, in which the market opened near its high and closed near its low. Exhibit 2 represents a bullish period, in which the market opened near the low and closed near the high of the session.

In Exhibit 3, there are no real bodies on these lines. Instead they have a horizontal line. These are examples of what are termed doji (do-gee) lines. A doji occurs when the open and close for that session are the same (or very close).

The doji is a distinct trend-change signal. Doji are valued for their ability to call market tops. This is especially true after a long white candlestick during an uptrend. The reason for the doji's negative implications in uptrends is that doji represent a market that is in balance. The only ways that the market can be in balance after a strong uptrend is that either the bullish force is weakening or supplies are increasing enough to meet increased demand. In either case, the doji is signaling that the market is now in a state of transition.

Chart 1. Copper, March 1992 (Doji after a Long White Candlestick).

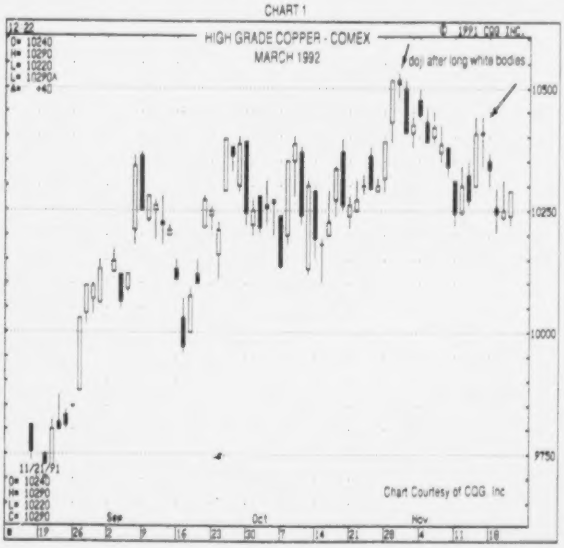


Chart Courtesy of CQG Inc

The shape of the candle line provides a quick visual representation of whether the bulls or bears are in charge. In the case of a doji (in which the open and close are the same, or nearly the same), it represents a stalemate between the bullish and bearish forces. In laterally trading markets, doji are thus neutral because the doji is reflective of the neutral state of the market. However, if a doji arises after a long white candle, especially at high price levels, it could be a forewarning of a top. This is because the doji after the long white candle tells us that the bulls lost control of the market (it does not mean that the bears have taken over already). In an uptrend, once the market becomes more balanced (as shown by the doji), there is an increased risk of the market falling of its own weight. In this chart we see what happened after the doji sessions (marked with arrows) which followed tall white candles. It should be noted that if the market closes above the doji session's high it negates any of the potentially bearish implications. In such a case, the market has become "refreshed", and higher prices should be expected.

In this section, we saw that the relationship between the period's open, high, low and close alters the look of the individual candlestick line. More importantly we can now see a major advantage of the candles; like a bar chart they give the trend of the market, but unlike the bar chart, the candles also show the force behind the move.

The Hammer And Hanging Man Lines

Exhibit 4 shows candlesticks with long lower shadows and small real bodies (that can be black or white). The real bodies are near the top of the daily range. The variety of candlestick lines shown in exhibit 4 are fascinating in that either line can be bullish or bearish. It depends on where they appear in a trend.

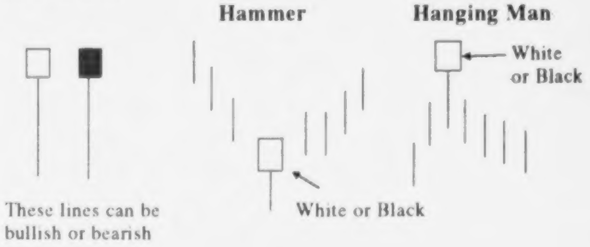


EXHIBIT 4

If either of these lines emerges during a downtrend, it is a signal that the downtrend should end. In such a scenario, this line is labeled a hammer, as in "the market is hammering out" a base.

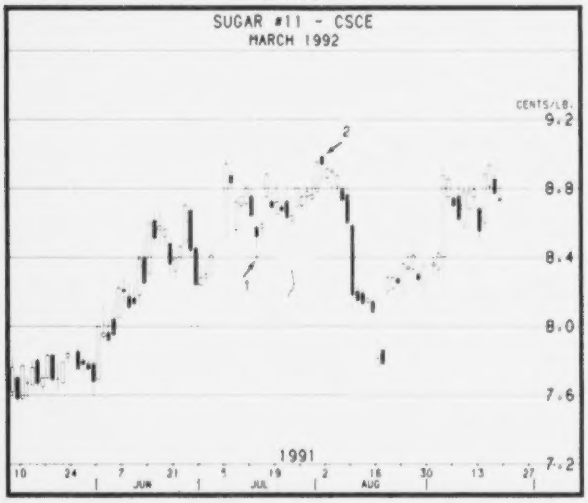
If either of the lines in Exhibit 4 emerge after a rally, it tells you that the prior move may be ending. Such a line is ominously called a "hanging man". The name is derived from the fact that it looks like a hanging man with dangling legs.

The longer the lower shadow, the shorter the upper shadow, and the smaller the real body, the more bullish the hammer or the more bearish the hanging man. Note that the hanging man and the hammer have the same basic shape--a small real body that is at the upper end of the trading range, a long lower shadow and no (or a very short) upper shadow.

It is especially important that the hanging man be confirmed in the next session by a close that is lower than the hanging man's real body. The reason for this is that the shape of the hanging man line itself is not really bearish. Think about what unfolds during a hanging man session. The market opens at, or near, its high for the session and then sells off sharply (as reflected by the long lower shadow). But by the end of the session the market recoups all, or most of, the lost ground by closing at, or near, its highs. This type of action may not appear bearish, but it does show the vulnerability of the market to breaking quickly to the downside. The pivotal time is the next session. If the market closes under the hanging man session's real body, it means all the new buyers on the opening and closing of the hanging man session are in a losing trade. The market then becomes susceptible to these longs liquidating. This could be the start of a new downleg.

Chart 2. Sugar, March 1991 (Hanging Man and Hammer)

CHART 2



This is an excellent example of how the same line can be bearish or bullish. Notice how line 1 is a hammer because it emerged after a downtrend, while the same kind of line --at 2-- was a bearish hanging man line since it arose after an uptrend.

See Chart 3 - Cash CRB Index (Hammer)

An ideal hammer pattern in which the lower shadow is many times the height of the small real body.

See Chart 4 - Oats, September 1991 (Hanging Man)

A classic hanging man. New highs were made for the move on the hanging man day. Then the next day, the market gapped under the hanging man's real body. This means that all of those new longs who bought on the hanging man's open or close are left "hanging" with a losing position.

CHART 3

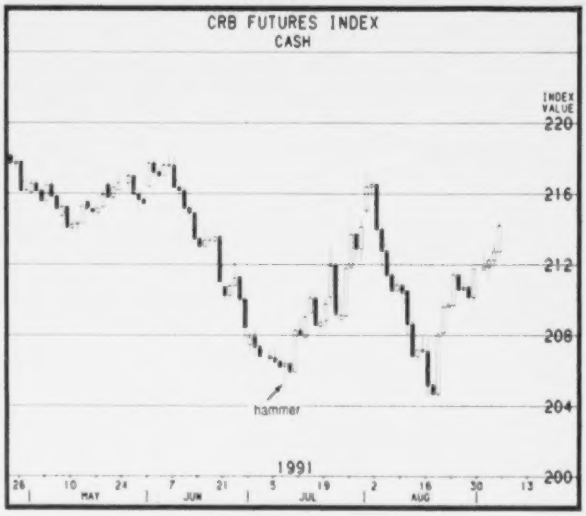
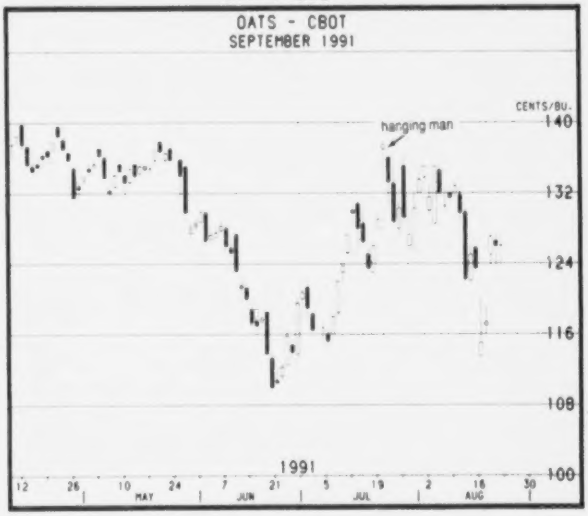


CHART 4 OATS



The Engulfing Pattern

The hammer and hanging man are individual candlestick lines. As we saw, they can send important signals about the market's health. Most candlestick signals, however, are based on combinations of individual candlestick lines. The engulfing pattern is one of these multiple candlestick line patterns. The engulfing pattern is a major reversal signal. Two opposite-color real bodies compose this pattern.

Exhibit 5 is a bullish engulfing pattern. The market is in a downtrend; then a white bullish real body engulfs the prior period's black real body.

Exhibit 6 illustrates a bearish engulfing pattern. Here the market is trending higher. The white real body engulfed by a black body is the signal of a top

Bullish Engulfing Pattern

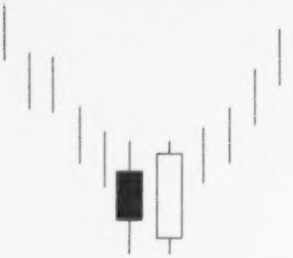


EXHIBIT 5

Bearish Engulfing Pattern

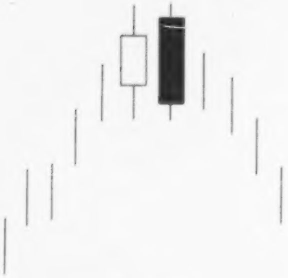


EXHIBIT 6

reversal.

This pattern is illustrative of the power of the candle charts, insofar as they clearly show who is winning the battle between the bulls and the bears. For example, with a bullish engulfing pattern the black candle, during a downtrend, reflects a market where the bears are in control. Then a strong white candle that wraps around the black one shows that the bulls have taken control from the bears.

For an engulfing pattern to be valid, the market has to be in a clearly definable uptrend or downtrend--even if it is a short-term trend.

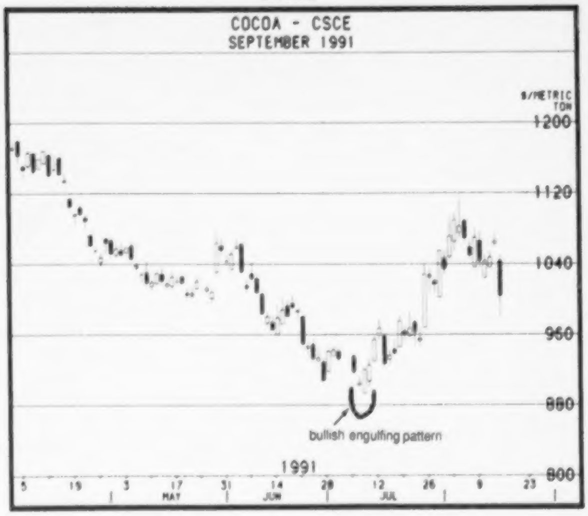
The closest analogy to the Japanese candlestick engulfing pattern is the Western reversal day. A Western reversal day occurs when, during an uptrend (downtrend), a new high (low) for the move is made and then prices close under (above) the prior day's close. Because the engulfing pattern requires that only the second real body engulfs the prior real body, but it need not engulf the shadows, this pattern will give a signal not available with the Western reversal pattern. This may allow you to get a jump on those who use traditional reversal days as a reversal signal.

See Chart 5 - Cocoa, September 1991 (Bullish EngulfingPattern)

A classic bearish engulfing pattern. Another positive at the time of the bullish engulfing pattern is that at the opening of the white session the market made a new low for the move. Yet these new lows couldn't hold.

See Chart 6 - CRB, Monthly (Bearish Engulfing Patterns)

CHART 5



Here are some instances where the candlestick charts may allow one to gain an advantage over those who use bar charts. Here are two bearish engulfing patterns. Since the upper shadows of the black candles of these bearish engulfing patterns didn't make new highs, there were no signs of top reversals using the traditional Western top-reversal pattern as a gauge. Yet the candlesticks provided bearish reversal signals with the bearish engulfing patterns.

The Dark Cloud Cover

Our next reversal pattern is the dark cloud cover (Exhibit 7). It is a top reversal after an uptrend or, at times, at the top of a congestion band. The first day of this two candlestick pattern is a strong white real body. The second day's price opens above the prior session's high (i.e., above the top of the upper shadow). However, by the end of the second day's session the market closes near the low of the day

CHART 6

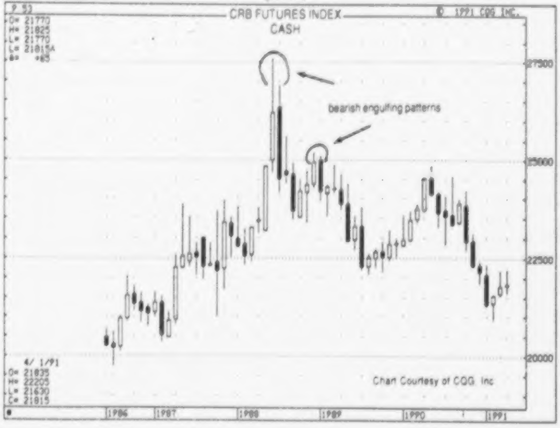


Chart Courtesy of CQG, Inc.

Dark-cloud Cover

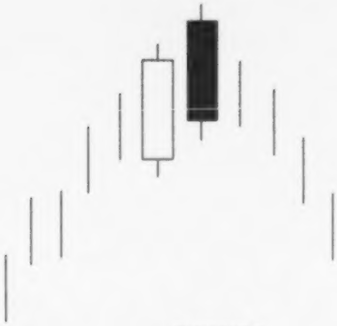


EXHIBIT 7

and well within the prior day's white body. The greater the degree of penetration into the white real body, the more likely a top. Some Japanese technicians require more than a 50 percent penetration of the black real body into the white real body. If the black candlestick does not close below the halfway point of the white candlestick, it may be best to wait for more bearish confirmation on the session after the dark cloud cover.

As discussed, the greater the degree of penetration of the black real body's close into the prior white real body, the greater the chance for a top. If the black real body covers the prior day's entire white body it would be a bearish engulfing pattern. The dark cloud cover's black real body only gets partially into the white body.

Think of the dark cloud cover as a partial solar eclipse that blocks out part of the sun (i.e., covers only part of the prior white body). The bearish engulfing pattern can be viewed as a total solar eclipse that blocks out the entire sun (i.e., covers the entire white body). A bearish engulfing pattern consequently is usually a more meaningful top reversal. Both the dark cloud cover and the bearish engulfing patterns should act as resistance on rallies. If the market closes above the high of the dark cloud cover or bearish engulfing pattern it voids their bearish aspects.

See Chart 7 - Coffee, December 1991 (Dark Cloud Cover)

Dark cloud covers and bearish engulfing patterns can become resistance areas. Here wc see that a dark cloud cover was formed by the price action on September 3 and 4. Note how this dark cloud became resistance a few days later.

CHART 7

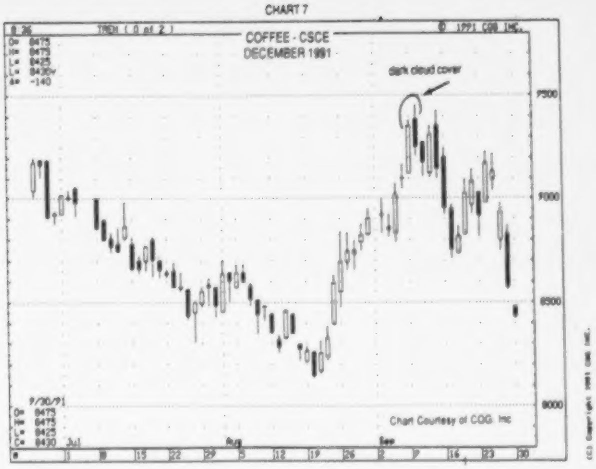


Chart Courtesy of CQG Inc

The Piercing Pattern

This bullish pattern (Exhibit 8) is the opposite of a dark cloud cover. The first candlestick of the piercing pattern is a black real body. The next session the market opens at new lows, but then prices push up, creating a long white real body that closes above the mid-point of the prior day's black real body. This pattern is an example of the usefulness of the candles. They provide an X-ray into the inner workings of the market, insofar as they display whether the bulls or the bears are prevailing. Before a piercing pattern the market is in a downtrend. This tells us the bears are in charge. The bearish black real body reinforces this view. The next day the market opens lower via a gap. The bears are watching the market with content. Then the market pushes sharply higher and closes well within the prior session's real body. The bulls have proved they can mount a strong counteroffense. The market now takes on a different composure. Those who are looking to buy would say new lows could not hold and perhaps it is time to step in from the long side. And those who are short will be second-guessing their position.

Piercing Line

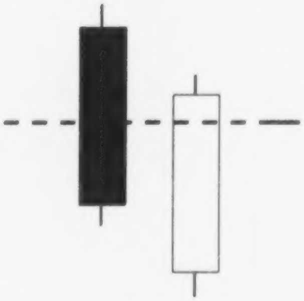
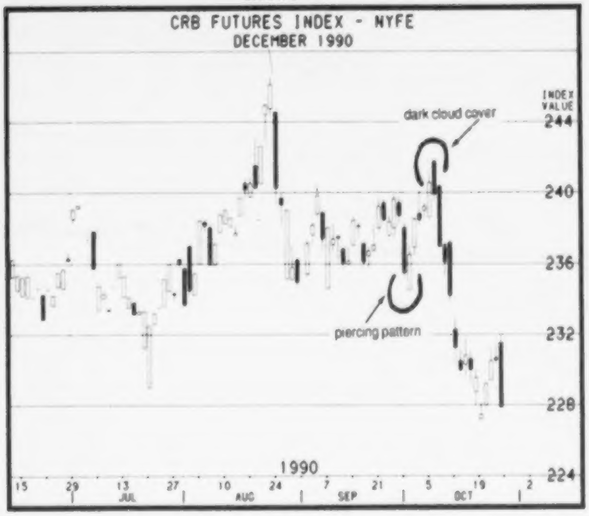


EXHIBIT 8

See Chart 8 - CRB, December 1990 (Piercing Pattern and Dark Cloud Cover)

This chart shows that the piercing pattern is the opposite of the dark cloud cover. The piercing patterns is a bottom reversal, and the dark cloud is a top reversal pattern. What is interesting about these patterns is that the piercing pattern made a

CHART 8



new low that couldn't hold. The market then rallied and pushed to a new high on October 8. This new high failed to hold. In the process of this failure to hold the October 8 high, there was the extra bearish impetus of the dark cloud cover.

The Morning Star

The morning star (exhibit 9) is a bottom reversal pattern. It is comprised of three candles. The first is a long black real body, the second candle is a small real body (white or black) that gaps under the prior session's long black real body (i.e. the first two real bodies don't touch). The third day is a white real body that moves well within the first period's black real body. The small real body in this pattern is the first clue that the sellers are losing the capability to drive the market lower. The next session's strong white real body proves the bulls took over.

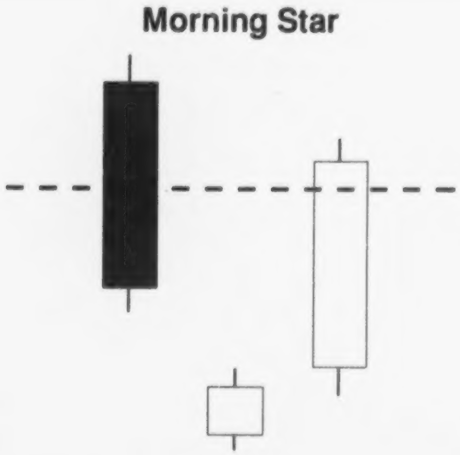
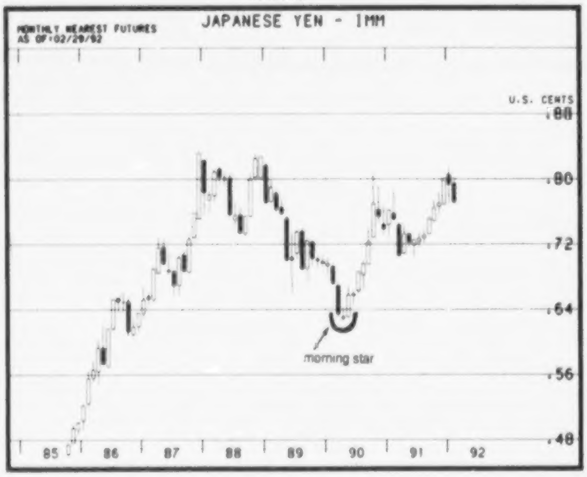


EXHIBIT 9

Chart 9. - Japanese Yen, Monthly (Morning Star)

A classic bullish star pattern developed from March to May 1990. Note that the first and third candles of the morning star resemble a piercing pattern, since the white candle pushes well into the black real body.

CHART 9



The Evening Star

The evening star is the bearish counterpart of the morning star pattern. Since the evening star is a top reversal, it should be acted upon if it arises after an uptrend. Three lines compose the evening star (Exhibit 10). The first two lines are a long white real body, followed by a small real body (black or white). The small real body is the first hint of a top. The third line is a black real body that moves sharply into the first session's white real body. The third line corroborates a top and completes the

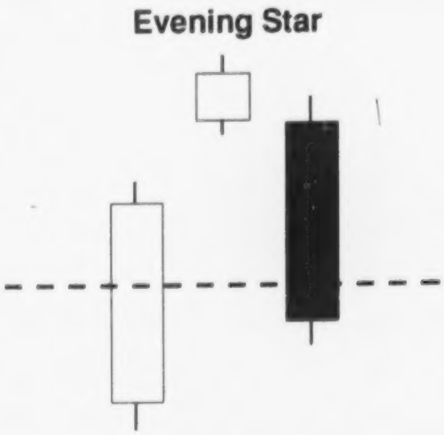
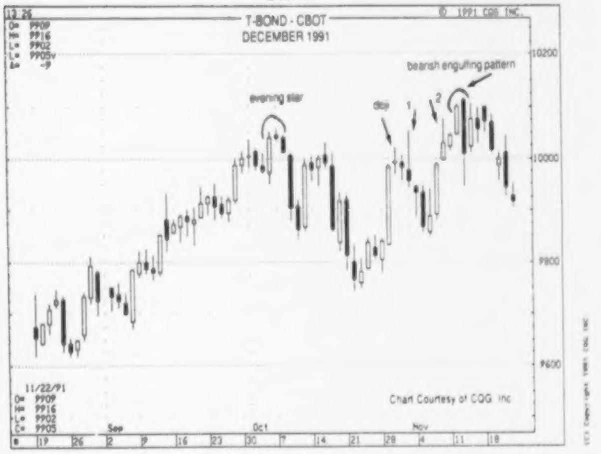


EXHIBIT 10

CHART 10



three line pattern of the evening star.

I like to compare the evening star pattern to a traffic light. The traffic light goes from green (the bullish white real body) to yellow (the small real body's warning signal) to red (the black real body confirms the prior trend has stopped).

One of the most fascinating aspects of the candles is its terminology. In this context let's discuss the evening star and morning star. The morning star is the nickname for the planet Mercury, which comes out before the sun rises. Thus the morning star pattern--as its name implies--is bullish. The evening star, the nickname of the planet Venus, comes out before darkness sets in. Consequently, the evening star pattern is a bearish pattern. Thus, the names of the candlestick patterns convey the emotional health of the market at the time the pattern is formed.

See Chart 10 - Bonds, December 1991 (Evening Star)

The evening star in early October called a temporary peak. Note how the second real body of this star pattern was essentially a doji session. Remember that a doji following a long white candle is a warning signal. Interestingly, there were other bearish candle signals near the same area as the evening star. On October 30, there was a doji after a long white candle. Then at candles 1 and 2, there were long upper shadows which reflected heavy selling when prices rallied. And finally, midmonth there was a bearish engulfing pattern that became resistance. All of these topping patterns emerged in the 100 to 101 area. A rally started with the hammer.

Window in an Uptrend

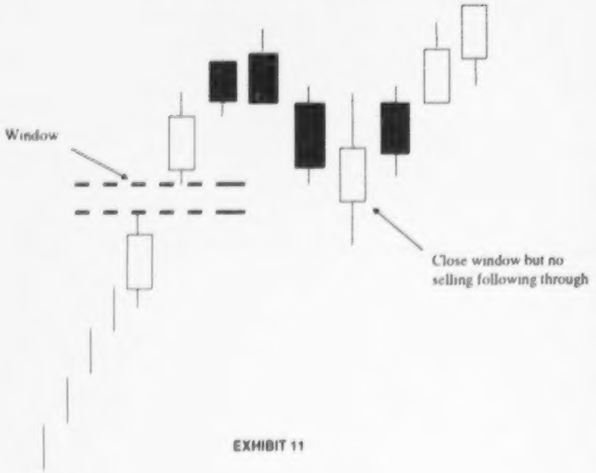


EXHIBIT 11

Window in an Downtrend

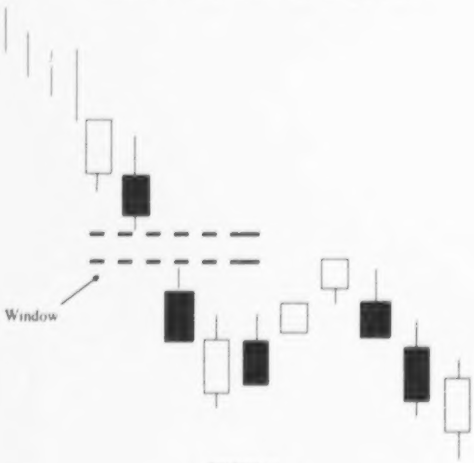


EXHIBIT 12

Windows

A window is the same as an American gap. In Exhibit 11 there is an ungapping window in which there is gap between the prior upper shadow and this session's lower shadow. A downgapping window (shown in Exhibit 12) reflects no price activity between the previous session's lower shadow and the current session's upper shadow.

Windows are among the few continuation patterns found with candlesticks. To refresh your memory, a continuation pattern is usually a temporary respite, before prices move in the same direction that was in effect before the continuation pattern arose. For example, an ungapping window is a bullish continuation pattern. The market may pull back to the window, but the prior trend (in this case up) should resume as long as the window holds as support.

Thus, trades should be placed in the direction of the window. If there is an ungapping window, the implications are for higher levels. The market might pullback to the window, but as long as the window remains as support, the trend is higher.

CHART 11

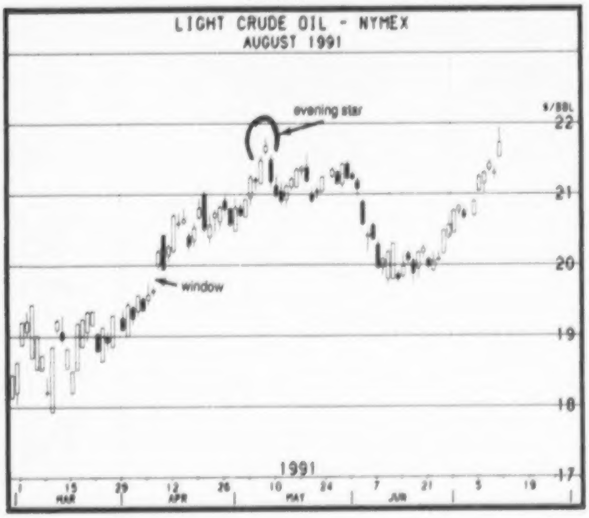


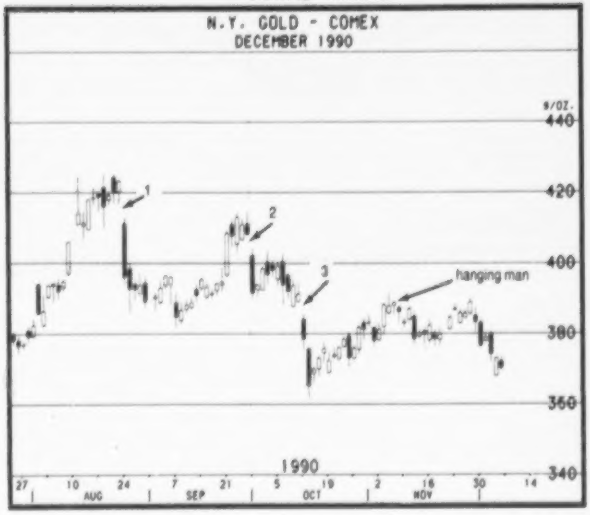
Chart 11. - Crude Oil, August 1991 (Window as Support)

The evening star pattern in early May signaled the high of the market just before the major break. This is a classic evening star, since there was a gap between the first and second candle and then another gap between the second and third real body. More often than not, there is no gap between the second and third real body (in other words the real bodies overlap). This does not seem to weaken the power of this topping pattern. The selloff that started with this evening star found a solid band of support at April's window.

See Chart 12 - Gold, December 1990 (Windows as Resistance)

This chart has a wealth of information. The window at 1 stopped the September rally. The downgapping window at 2 short-circuited the early October rally and the window at 3 was a ceiling to the market during November's rally. Notice the hanging man session in November that confirmed the resistance at window 3.

CHART 12 WINDOWS

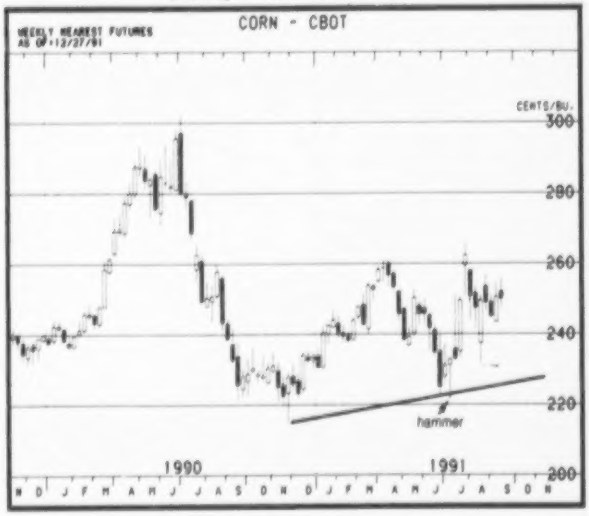


East Meets West

Candlestick methods by themselves are a valuable trading tool. Yet, candlestick techniques become even more powerfully significant if they confirm a Western technical signal. The next few charts illustrate the value of candles as a method of confirming a Western technical signal.

Chart 13. Corn, Weekly Continuation - December 1990 (East with West)

CHART 13 TRENDLINE & HAMMER



One of the major advantages of the candles is that they can be used in conjunction with any Western technical tool. For example, notice in this chart how something as basic as a trendline can be combined with candles. Here we see that the hammer was bullish confirmation of a third successful

CHART 14 REMEMBER THE OVERALL PICTURE!

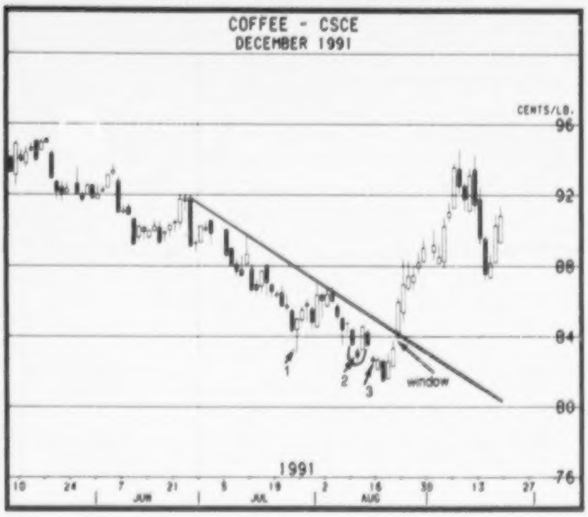
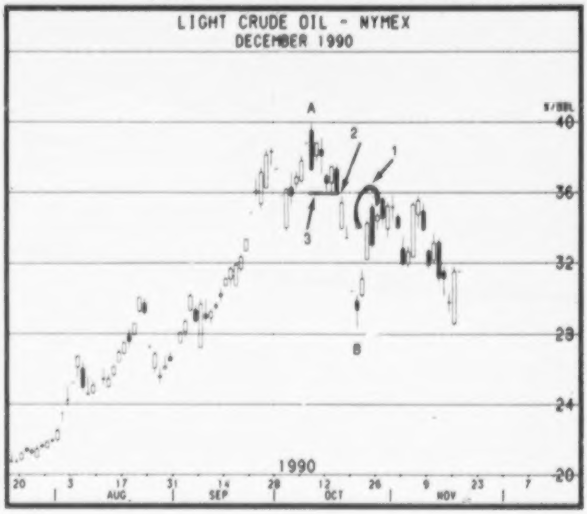


CHART 15 CONFLUENCE OF TECHNICAL TECHNIQUES



test of an uptrend support line.

See Chart 14 - Coffee, December 1991 (Remember the Overall Technical Picture)

The candle patterns, while providing valuable insights into the market, should never be viewed in isolation. The overall technical picture is more important than an individual candle signal. The direction of the major trend, for example, should always be considered before placing the trade. This chart shows a multi-tested resistance line that kept rallies in check. However, there were a group of candle signals that were signaling a bottom. Specifically, hammers at 1 and 3 and a morning star pattern at 2 implied a bottoming process. However, the resistance line was a warning that the trend was still pointing southward. Thus, candle signals 1, 2 and 3 could have been used to cover shorts. What was a buy signal? On August 23, prices opened a small window and then closed above the resistance line. Another positive aspect of the action on that day was that it completed a five-day island bottom.

The more technical signals you have coinciding in the same price area (this could mean candle patterns and/or Western signals), the more technically significant that area becomes. I call this a confluence of technical indicators. The next chart illustrates this concept.

See Chart 15 - Crude Oil, December 1990 (Confluence of Technical Indicators)

This chart has four technical indicators (Western and Eastern) that warned of resistance near $36. Let us look at these:

1.) A dark cloud cover often acts as resistance. This was near $35.50.

2.) A small downgapping window defines resistance near $36.

3.) An old support area (in this case near $36) often converts to new resistance.

4.) A fibonacci 61.8% retracement of the October selloff from A to B was near $35.50.

Thus, until the bulls were able to push above $36 on a close, it was a warning to be cautious about the long side of the market, based on the confluence of technical factors that all coincide in the $35.50 to $36.

Conclusion

The power of the candles is in their flexibility; they can be used alone or melded with any Western technical tool. We saw that they can be joined with trendlines, and they can be merged with such indicators as RSI, stochastics, volume indicators, Elliott Wave, moving averages, and so on. By using candle charts, you can remain with the technical tools or systems with which you are most comfortable. The candles will add an extra dimension of analysis unavailable elsewhere.

This is just a basic introduction to the power of the candle charts. There are many more patterns and trading techniques. But even with this basic introduction, you can open new doors of analysis. The candles will give you new insights into the markets.

Once you are comfortable with the candle, you will find that the union of Eastern and Western techniques creates a wonderfully exciting and powerful combination.

THE STRUCTURE AND IMPACT OF THE 1990 FARM BILL

BY RICHARD LOEWY

Summary of the 1990 Farm Bill

Each Farm Bill has its own peculiarities and unique features that emanate from the economic and political environment during the inception of the Bill. President Bush inherited the economic woes of Reagan supply-side economics, including record budget and trade deficits of $278 billion and $75 billion, respectively, as of September 30, 1991. The urban interest groups, aware of the large incomes of U.S. farmers from 1985-1990 and the huge government expenditures related to the Farm Bill, mandated that Bush implement smaller spending on the farm programs.

The subtleties of expenditure reductions were manifested in the government's attempt to maintain low agricultural stock levels by discouraging entry into the Farmer-Owned Reserve and CCC Held Inventory Program. This will continue, unless the GATT talks on alleviating farmer and export subsidies get off dead center. Eventually, there is some promise that the European Community will make the necessary internal and export subsidy adjustments to prevent the Eastern European countries from competing with the Community as a significantly cheaper producer. U.S. target and loan rates will be relatively stable, so as not to increase farmer deficiency payments.

A new U.S. marketing loan program for soybeans hopefully will discourage Brazilian and Argentine soybean acreage expansion, and at the same time allow the U.S. soybean farmer deficiency payment price protection from the level of $4.92 a bushel and below. Farmers can plant minor oilseeds on 0/92 land, and will continue to accomplish this through 1995, unless spring wheat and durum wheat prices trend to significantly attractive levels, at the expense of minor oilseeds. This latter scenario appears to be the situation for 1992/93. The flexi-acreage programs of 25 percent provide ample acreage shifting and were partially responsible during the 1991/92 crop year for farmers shifting to soybeans, along with farmers striving to rotate away from corn. Corn was the favored son of all the products of the 1985 Farm Bill years, even with the 3.8 million acres removed from the Conservation Reserve Program (CRP), as the corn target price was the principal barometer of price decision-making.

The Goals of the 1985 Farm Bill

The principal goals of the 1985 Farm Bill were as follows:

1.) To protect farm income.

2.) To promote optimization of agricultural production of the most productive, high-yielding land and delete the least productive, marginal land. The accompanying goal was to alleviate the burdensome stock levels of the 1980-85 era.

3.) To allow farmers to make decisions based on economic signals instead of government programs.

4.) To enhance the competitiveness of U.S. exports.

Table 1. U.S. Net Farm Income ($ billion)

Fiscal Year	
1981	$27.0
1982	$23.5
1983	$15.3
1984	$26.3
1985	$31.0
1986	$31.0
1987	$39.7
1988	$41.0
1989	$49.2
1990	$49.6
1991	$40-$45[e]

e=estimate

Source: U.S. Dept. of Agriculture

Table 2. U.S. Principal Cash Crops, Planted Acres (million acres)

Crop	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92
Soybeans	67.5	70.9	63.8	67.8	63.1	60.4	58.2	58.8	60.8	57.8	59.8
Corn	84.1	81.9	60.2	80.5	83.4	76.7	66.2	67.7	72.2	74.2	75.9
Sorghum	15.9	16.0	11.9	17.3	18.3	15.3	11.8	10.3	12.6	10.5	11.0
Barley	9.6	9.5	10.4	11.9	13.1	13.0	10.9	9.8	9.1	8.2	9.0
Oats	13.6	14.0	20.3	12.4	13.2	14.7	17.9	13.9	12.1	10.4	8.7
Total Feedgrains	123.2	121.4	102.8	122.1	128.0	119.7	106.8	101.7	106.0	103.3	104.6
Total Wheat	88.3	86.2	76.4	79.2	75.5	72.0	65.8	65.5	76.6	77.3	70.0

Sources: U.S. Dept. of Agriculture, AgResource Company

Table 3. U.S. Average Acreage for Prior Two Farm Bills (million acres)

	1981/82-1985/86	1986/87-1990/91	Net Acreage Decline
Soybeans	66.6	59.2	-7.4
Feedgrains	119.5	107.5	-12.0
Wheat	81.1	71.4	-9.7
Total	267.2	238.1	-29.1

Source: AgResource Company

Note that there was a drought in 1983/84 and 1988/89; consequently, the 5-year comparisons are not biasing the 5-year periods.

The acreage decline in the feedgrain, wheat and soybean categories shown above was principally reflective of the CRP, responsible for enrolling 33.9 million acres of marginal yielding land out of potential production during the 1986-1990 period, with the goal of enrolling an additional 7-12 million acres until 40-45 million acres are enrolled by 1995.

The Impact of the 1985 Farm Bill

1.) The 1981-85 net farm average income was $24.6 billion and the 1986-90 average was $42.1 billion, an increase of 71.1 percent. Clearly, the first goal above was met.

2.) The goal to meet optimized production of higher yielding land and at the same time draw down burdensome stocks was also accomplished.

A.) Soybean acreage declines in the 1986-1990 period were more reflective of acreage shifts out of the lower-yielding regions of the Northern Plains, the Lake States and the Corn Belt. The large acreage shifts out of the South reflect the strain on the capabilities of farmers to make even nominal profits. The 10-year yield average for the Southeast farmer is 21.4 bu./acre; for the Delta farmer 23.2 bu.; and for the Appalachian farmer 26.0 bu. The 10-year national average has been 31.1 bu./acre.

The overall decline in U.S. soybean planted acreage was more than offset in the same 5-year time frame by soybean acreage increases in Brazil and Argentina. Unfortunately, the U.S. government lost an opportunity to cast a dagger in the heart of Brazilian soybean expansion in the newer producing areas of the north in 1986-88 by not implementing a soybean marketing loan. This has finally been accomplished in the 1990 Farm Bill, but unfortunately the expansion areas have no, or few, alternative crops to soybeans. Consequently, the U.S. damage control has probably been minimal. Argentina's soybean expansion will have leveled off, as the more drought-resistant sunflower seed has been the focus of oilseed attention. The leveling off or demise in acreage in subsequent years will result only from dire economic problems, coupled with a lack of credit in either country. Table 4. shows the U.S. historical soybean plantings by region.

B.) Feedgrain acreage, unlike soybean acreage, represented across-the-board declines by region for every feedgrain: corn, sorghum, barley and oats. Enrollment in the CRP for the 1986-1990 period was as follows for the various feedgrains: corn- 3.8 million acres; sorghum- 2.4 million; barley- 2.7 million; and oats- 1.3 million acres, for a total feedgrain enrollment of 10.2 million acres.

C.) The decline in all-wheat average acreage from 1981/82-1985/86 of 81.1 million acres to the 1986/87-1990/91 average of 71.4 million acres was 12 percent, the largest product group decline. Winter wheat acreage declines were indicative of each of the hard red winter, soft red winter and soft white classes. Durum wheat also recorded acreage declines. The only exception was hard red spring acreage, which from the 1985 Farm Bill average of 13.7 million acres increased 1.0 million acres to 14.7 million for the 1986-1990 period. Enrollment in the CRP from the 1986-1990 period was 10.3 million acres out of a total 33.9 million, for a percentage breakdown allocated for wheat of 30.4 percent. The decline in wheat acreage for the 1986-90 period almost coincided with the increased enrollment in the CRP.

The decline in ending stocks in the 1986-90 period from 1981-85 for soybeans, the feedgrains and wheat reflects acreage and production declines and also increased disappearance of corn, sorghum and barley (but not soybeans and wheat). The comparable period supply/disappearance balances are reflected in Tables 5., 6., 7., 8., and 9.

The impact of increased production and export competition from Brazil was lower U.S. soybean exports during the 1986-90 period. Fortunately, the

Table 4. U.S. Annual Planted Soybean Acreage by Region (thousand acres)

	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92
N. Plains	4,720	5,365	5,240	6,450	5,680	6,175	6,470	6,960	7,040	6,850	7,400
S. Plains	840	1,300	710	690	530	495	420	530	800	470	450
Lake States	5,890	6,560	6,100	6,980	6,550	6,050	6,130	6,580	6,570	6,290	7,470
Corn Belt	30,620	31,810	29,700	31,400	31,000	30,950	30,100	29,450	30,200	29,100	30,850
Delta	11,460	11,200	9,770	9,850	8,700	7,880	7,550	7,650	7,450	7,250	6,550
Northeast	925	1,010	932	1,005	960	925	955	1,050	1,250	1,095	1,200
Appalachian	6,715	6,910	5,920	6,020	5,280	4,870	4,280	4,180	4,650	4,490	4,130
Southeast	6,373	6,729	5,407	5,360	4,430	3,040	2,275	2,440	2,860	2,250	1,725
Total	67,543	70,884	63,779	63,130	63,130	60,385	58,180	58,840	60,820	57,795	59,775

Source: AgResource Company

Table 5. U.S. Annual Soybean Supply/Disappearance Balance Sheet, Sept.-Aug. Crop Year (million bushels)

	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91
Supply										
Beg. Stocks - Sept.1	313	254	345	176	316	536	436	302	182	239
Production	1,989	2,190	1,636	1,861	2,099	1,942	1,938	1,549	1,924	1,926
Imports	0	0	0	0	0	0	1	4	3	2
Total	2,302	2,444	1,981	2,037	2,415	2,478	2,375	1,855	2,109	2,167
Disappearance										
Crush	1,030	1,108	983	1,030	1,053	1,179	1,174	1,058	1,146	1,180
Exports	929	905	743	598	740	757	802	527	623	560
Food/Seed/Residual	89	86	79	93	86	106	97	88	101	98
Total	2,048	2,099	1,805	1,721	1,879	2,042	2,073	1,673	1,870	1,833
End Stocks	254	345	176	316	536	436	302	182	239	329

Source: U.S. Dept. of Agriculture

Table 6. U.S. Soybean Disappearance (million bushels)

	1980 Farm Bill Avg. 81/82-85/86	1985 Farm Bill Avg. 86/87-90/91	Differential
Crush	1,041	1,147	+106
Exports	783	654	-129
Total Disappearance	1,824	1,801	-23

Sources: U.S. Dept. of Agriculture, AgResource Company

increasingly larger volumes and current record domestic disappearance for both soybean meal and soyoil offset the lower product export figures, and resulted in record crush figures. However, the decline in U.S. exports more than offset the increased crush rates, thereby causing a decline in total soybean disappearance for the 1986-90 period.

In Table 7., the domestic use increase in the 1986-90 period reflected changes in both the domestic feed and food/industrial categories. The sharp expansion in the livestock sector during this period was prompted by low feedgrain and soybean meal prices, resulting in excellent profit margins. Farmers who raised cattle, hogs, and poultry and produced corn and soybeans were able to optimize revenue. Food/industrial use of corn accelerated, as ethanol production and high fructose corn sweetener use for the soda pop industries accelerated. The Clean Air Bill implemented during the 1990 Farm Bill will further prompt expansion of ethanol production and accelerate disappearance to much larger volumes at record proportions, commencing with the 1992/93 crop year.

U.S. corn exports benefited from relatively cheap prices, and other factors were involved. The USSR, Mexico, South Korea and Taiwan sharply accelerated the import pace from the 1981-86 period, as corn/protein ratios for livestock feeding were enhanced, particularly in the USSR. Moreover, corn and sorghum plantings in Argentina, a former leading export competitor of the U.S., sharply declined in the 1986-90 period, to prompt higher soybean and sunseed plantings.

The 1981/82-1985/86 Argentine corn plantings declined from an average of 3.180 million hectares to 2.450 million hectares during the 1986/87-1990/91 period. For the same periods, Argentine sorghum acreage declined from 2.293 to 960 thousand hectares. The two feedgrains together fell an average of 2.063 million hectares (5.1 million acres). Total U.S. corn disappearance increased an average of 767 million bushels during the 1986-90

Table 7. U.S. Annual Corn Supply/Disappearance Balance Sheet, Sept.-Aug. Crop Year (million bushels)

	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91
Supply										
Beg. Stocks-Sept. 1	1,392	2,537	3,523	1,006	1,648	4,040	4,882	4,259	1,930	1,345
Production	8,119	8,235	4,174	7,672	8,876	8,226	7,131	4,929	7,526	7,933
Imports	0	0	2	1	10	1	3	3	2	3
Total	9,511	10,772	7,699	8,679	10,534	12,267	12,016	9,191	9,458	9,281
Disappearance										
Feed/Residual	4,180	4,533	3,831	4,090	4,107	4,701	4,812	3,982	4,455	4,710
Food/Seed/Ind.	797	895	976	1,091	1,160	1,192	1,229	1,251	1,290	1,325
Total Domestic	4,977	5,428	4,807	5,181	5,267	5,893	6,041	5,233	5,745	6,035
Exports	1,997	1,821	1,886	1,850	1,227	1,492	1,716	2,028	2,368	1,725
Total	6,974	7,249	6,693	7,031	6,494	7,385	7,757	7,261	8,113	7,760
End Stocks	2,537	3,523	1,006	1,648	4,040	4,882	4,259	1,930	1,345	1,521

Source: U.S. Dept. of Agriculture

Table 8. U.S. Corn Disappearance (million bushels)

	1980 Farm Bill Avg. 81/82-85/86	1985 Farm Bill Avg. 86/87-90/91	Differential
Domestic Disappearance	5,132	5,789	+657
Exports	1,756	1,866	+110
Total Disappearance	6,888	7,655	+767

Source: U.S. Department of Agriculture, AgResource Company

period.

An analogous situation for U.S. sorghum and barley to corn surfaced during 1986-90, as the export pace for both feedgrains increased, but domestic use was virtually unchanged to lower, as lower stock levels resulted in rationing of domestic use at higher prices. The lesser feedgrain, oats, is not reflective of the other feedgrains, as increasingly larger imports from Canada, Sweden and Finland have offset lower U.S. production. Moreover, domestic oats feeding rates tailed off dramatically, coinciding with declining consumption by animals, commensurate with a shift to the specialty nutrition products in the food/industrial category.

In Tables 9. and 10., increased domestic disappearance for wheat for the 1986/87-1990/91 period was primarily due to the expansion of food use, as millers' demand for flour became insatiable, representing an annual growth rate in the past decade of 3.6 percent. Domestic feed was only slightly higher for an average of 13 million bushels for the same timeframe, as cheap feedgrain prices, versus wheat, in the latter 5-year period curtailed a large volume expansion in the rate. However, the wheat export pace did not fare as well, declining an average 232 million bushels for the 1986-91 period. This occurred in spite of the inception in 1986 of the Export Enhancement Program (EEP), which was designed to combine normal commercial price rates with lower subsidized price levels to offer competitive prices to importing nations.

The volume of wheat sales generated through the EEP for the 1985 Farm Bill period was intended to compete exclusively with the European Community. However, U.S. export subsidies have also hurt other exporting nations, including Canada, Argentina, and Australia. Their lower exports were in part due to lower available supplies. However, a lesson is to be learned on trade subsidy wars: increased protectionism begets more retaliatory protectionism, resulting in higher import costs, particularly for developing nations. The net result is a shrinkage of world trade, with both importing and exporting nations ending up as losers.

Sharply lower U.S. wheat ending stocks for the 1986-90 period, particularly commencing with 1988/89, ensued. End stocks below the 1.0 billion bushel level should persist through the end of the 1990 Farm Bill period ending in 1995.

3.) The third goal of the 1985 Farm Bill of allowing farmers to make decisions based on economic signals must be viewed as a failure. The greatest shortcoming was the existence of the higher target price for corn, versus the lower soybean loan rate. That mitigated against farmers making price decisions on the average price of soybeans versus corn, in a typical free-market environment during the 1986-90 period. Below are reflected the two sets of cash prices and ratios, which prevented normal planted acreage patterns.

Table 11. reflects the true soybean/corn price ratio that farmers analyzed for decision-making purposes on planting intentions. Note that the breakeven price ratio for soybean/corn farmers is 2.5:1.0. The low ratio established for the corn target price/soybean loan relationship significantly favored corn for all the crop years from 1986-90. The converse is true for actual cash prices to soybean/corn farmers reflected in Table 12., where price ratios clearly favored soybean plantings versus corn in three of the five years and breakeven for the last two years. However, corn was the favored crop between the two, in spite of large enrollment of

Table 9. U.S. Annual All Wheat Supply/Disappearance Balance Sheet, June/May Crop Year (million bushels)

	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91
Supply										
Beg. Stocks-June 1	989	1,159	1,515	1,399	1,425	1,905	1,821	1,261	702	537
Production	2,785	2,765	2,420	2,595	2,424	2,091	2,108	1,812	2,037	2,736
Imports	3	8	4	9	16	21	16	23	23	36
Total	3,777	3,932	3,939	4,003	3,865	4,017	3,945	3,096	2,762	3,309
Disappearance										
Food	602	616	643	651	674	712	721	726	753	796
Seed	110	97	100	98	93	84	85	103	100	90
Feed/Resid	135	195	371	407	284	401	280	146	139	489
Total Domestic	847	908	1,114	1,156	1,051	1,197	1,086	1,419	992	1,375
Exports	1,771	1,509	1,426	1,422	909	999	1,598	975	1,233	1,068
Total	2,618	2,417	2,540	2,578	1,960	2,196	2,684	2,394	2,225	2,443
End Stocks	1,159	1,515	1,399	1,425	1,905	1,821	1,261	702	537	866

Source: U.S. Dept. of Agriculture

Table 10. U.S. Wheat Disappearance (million bushels)

	1980 Farm Bill Avg.	1985 Farm Bill Avg.	Differential
Domestic Disappearance	1,015	1,214	+199
Exports	1,407	1,175	-232
Total Disappearance	2,422	2,389	-33

Source: AgResource Company

Table 11. U.S. Soybean Loan Price vs. Corn Target (dollars per bushel)

Crop Year	Soybean Loan Price	Corn Target Price	Bean/Corn Ratio
1979/80	$5.02	$2.20	2.28
1980/81	$5.02	$2.35	2.14
1981/82	$5.02	$2.40	2.09
1982/83	$5.02	$2.70	1.86
1983/84	$5.02	$2.86	1.76
1984/85	$5.02	$3.03	1.66
1985/86	$5.02	$3.03	1.66
1986/87	$4.56	$3.03	1.50
1987/88	$4.77	$3.03	1.57
1988/89	$4.77	$2.93	1.63
1989/90	$4.53	$2.84	1.60
1990/91	$4.53	$2.75	1.65

Source: AgResource Company

3.8 million acres for corn in the Conservation Reserve Program. Soybean plantings would have been higher if true market price determinants were evaluated, which obviously was not the case. Also, as was mentioned previously, increased Southern Hemisphere soybean plantings further aggravated the lower U.S. soybean plantings.

4.) The 1985 Farm Bill goal of enhancing the competitiveness of U.S. exports was only partially successful, or can even be viewed as a failure, since the 1981/82-1985/86 period showed higher U.S. exports of wheat, soybeans, soymeal and soyoil, versus the 1986/87-1990/91 timeframe. Only feedgrain exports, including corn, sorghum and barley, expanded. Oat exports are so nominal that no evaluation of this feedgrain is included. Note that Point 2. of the impact of the 1985 Farm Bill discusses the export differentials of the two periods. Not included in the supply/disappearance tables above were soybean meal, soyoil, sorghum, barley and oats.

The most logical explanation for the poorer overall exports in the 1986/87-1990/91 period in general, versus other domestic disappearance, is that the cheap prices of feed and protein prompted a protracted expansion in cattle, hogs and poultry, resulting in record domestic consumption of corn and soymeal. Livestock profit margins were excellent throughout the period. Domestic consumption of soybean oil soared to record levels with the rising health consciousness of the American public, accompanied by a near obsession with low-cholesterol vegetable oils. Indicative of the continuing strong domestic soybean oil disappearance is the fact that even the U.S. recession during 1990/91 and early 1991/92, usually spurring lower domestic use, was unable to prevent record levels. The augmented utilization of soybean oil by the fast food chains offset the decline in other restaurant usage during the recession. Increased utilization of corn for ethanol production and HFCS for the soda industry was the other positive domestic use feature. Strong domestic disappearance across-the-board detracted somewhat from available product for the export sector. The diminished production and supply levels, primarily a feature of the acreage enrollment in the Conservation Reserve Program, further inhibited the export pace.

Summary of the 1985 Farm Bill

The positive accomplishments--increased farmer income; removing lower-yielding land from production, resulting in smaller supplies and lower stocks; maintaining a good balance of lower loan rates and target prices, prompting low enough feedgrain and protein prices to expand the livestock sector; and consequently, record domestic disappearance of corn, soymeal and soyoil; along with adequate deficiency payments for farmer protection to offset the lower price levels--more than offset the negative aspects of lower exports and the lack of a true free-market environment. **The 1985 Farm Bill must, consequently, be viewed as a success.**

Table 12. U.S. Soybean Prices to Farmers vs. Corn Prices (dollars per bushel)

Crop Year	Average Soybean Cash Price	Average Corn Cash Price	Bean/Corn Ratio
1979/80	$6.28	$2.48	2.53
1980/81	$7.57	$3.13	2.42
1981/82	$6.07	$2.47	2.46
1982/83	$5.71	$2.64	2.16
1983/84	$7.83	$3.23	2.42
1984/85	$5.84	$2.64	2.21
1985/86	$5.05	$2.22	2.27
1986/87	$4.78	$1.51	3.17
1987/88	$5.88	$1.95	3.02
1988/89	$7.42	$2.53	2.93
1989/90	$5.69	$2.41	2.36
1990/91	$5.71	$2.30	2.48

Source: AgResource Company

The 1990 Farm Bill

The principal 1990 farm policy goals were as follows:

1.) To reduce the budget deficit.

2.) To improve the competitiveness of agriculture. This has roots in the "decoupling" concept, espoused by Senator Boren of Oklahoma and former Senator Boschwitz of Minnesota. This policy attempted to protect farm income, promote full production, and allow farmers to make decisions based on economics of planting alternatives, rather than government programs. A prime objective was to increase the competitiveness of U.S. exports.

3.) To enhance the environment.

The Details of the 1990 Farm Bill

1.) The widening U.S. recession left the Federal Reserve with no alternative but to employ monetary policy, by lowering interest rates and hoping that the economy resurrects. If lower interest rates cannot spur growth in the economy by increasing consumer purchasing, then in the true sense of the definition, a depression will have evolved. The fiscal policy alternative of lowering taxes would not be politically viable in an election year, where a panacea for diminished budget deficits is a combination of decreased spending and increased revenues. Moreover, President Bush hasn't had the luxury of time to postpone budget deficit problems, unlike the eight years accorded to Ronald Reagan. Before the 1992 election, Bush had to focus on the domestic economy, particularly decreased spending. Curtailment of Farm Bill expenditures was one of the priorities of his agenda. Below is a historical and projected version of government expenditures related to the Farm Bill.

Table 13. Total Support Budgetary Outlays for Farm Programs ($ billion)

Fiscal Year	
1980	\$2.7
1981	\$3.9
1982	\$11.6
1983	\$18.8
1984	\$7.2
1985	\$17.6
1986	\$25.8
1987	\$22.3
1988	\$12.5
1989	\$10.4
1990	\$6.5
1991	\$10.6
1992	$\$11.9^{e}$
1993	$\$7.5^{e}$
1994	$\$6.5^{e}$
1995	$\$5.5^{e}$

e= estimate

The overriding concern about the federal budget deficit prompted top-echelon USDA officials to attempt to maintain expenditures at the fiscal 1990 level of $6.5 billion as a bench mark through 1995. However, in 1991 and probably 1992, program costs exceeded expectations. The implementation of the 2 percent origination fees for the oilseeds, the dairy assessment, and the 15 percent NFA Program should help increase government income and decrease costs. However, on a year-to-year basis, the unknown factors of farm prices and costs make it difficult to project expenditures. Unequivocally, one consolation is that government expenditures won't rise near the 1986 and 1987 levels of $25.8 billion and $22.3 billion. The government has implemented three new mechanisms in the 1995 Farm Bill for increasing revenues or decreasing costs:

A.) All loans for soybeans and the minor oilseeds of sunseed, canola, rapeseed, safflower, mustard seed and flaxseed are subject to a 2 percent loan origination fee, which translates to 10 cents a bushels for soybeans and 0.18 cents per pound for the minor oilseeds. The loan origination fee is pledged as collateral for a price support loan or the quantity of oilseeds on which a loan deficiency payment was made.

B.) An assessment will be applied to dairy producers for an amount needed to reimburse the CCC for the cost of purchases in excess of 7.0 billion pounds, milk equivalent. The assessment is calculated by dividing the cost of purchases in excess of 7.0 billion lbs. by the total quantity of hundredweights of milk that the USDA Secretary estimates will be produced and marketed for commercial use during the next calendar year.

C.) Normal Flex Acreage (NFA)--This provision provides for a 15 percent reduction in payment acreage. Producers are ineligible to receive deficiency payments on 15 percent of their crop acreage base. Producers are allowed to plant any crop on this acreage, except fruits and vegetables.

The increased revenue/cost savings features in the Bill should prompt total Farm Bill expenditures not to exceed $10 billion by a large dollar amount. The total expenditures should, in fact, decline below the $10 billion level in the last three years of the 1995 Farm Bill, as projected above.

2.) The 1990 Farm Bill goal of enhancing the competitiveness of the agricultural sector has its roots in the implementation of precepts of the 1985 Bill. If the recession in the U.S. continues and if

Table 14. Target Price Levels (dollars per bushel)

	1985 Farm Bill					1990 Farm Bill
	86/87	87/88	88/89	89/90	90/91	1991-95
Wheat	\$4.38	\$4.38	\$4.23	\$4.10	\$4.00	\$4.00
Corn	\$3.03	\$3.03	\$2.93	\$2.84	\$2.75	\$2.75
Sorghum	\$2.88	\$2.88	\$2.78	\$2.70	\$2.61	\$2.61
Barley	\$2.60	\$2.60	\$2.51	\$2.43	\$2.36	\$2.36
Oats	\$1.60	\$1.60	\$1.55	\$1.50	\$1.45	\$1.45

Source: U.S. Dept. of Agriculture

world economies falter--because of problems in the U.S., along with the death knell of Communism in Eastern Europe and the former USSR converting to a new capitalist environment, and the financial problems accruing to Germany by carrying the former East Germany--at least the U.S. farmer deficiency payments will be in tact, since target prices will have been frozen for 5 years through 1995 from the 1990/91 levels. Farmer income protection will be provided for through 1995.

In Table 14., note that from 1986/87 through 1990/91, wheat target prices declined by $0.38, corn-$0.28, sorghum-$0.27, barley-$0.24 and oats-$0.15. The USDA was aware that in not lowering the target prices, reductions in government expenditures had to come from other areas. The tradeoff was farmer income protection, important for farmers and for the re-election of President Bush.

The basic concept of how deficiency payments are made is as follows: the government uses the average prices to farmers for the first five months of the crop year to determine the differential between the target price and market price. If the average market price exceeds the Basic Loan Rate, the farmer payments will simply be the differential of the target price and market price. If the market price average falls below the Basic Loan Rate, the higher rate of the 12-month season average market price (instead of the 5-month market price) and the Reduced Announced Loan Rate is used to determine the Actual Deficiency Payment Rate.

The bottom line is that target price levels for the 1990 Farm Bill period are still attractive enough to prevent farmers from withdrawing from the programs completely, which should avoid prospects of excessive plantings in general. Consequently, along with the expected 40-45 million acres set aside in the Conservation Reserve Program by 1995 and the government desire to curtail inventory buildup by discouraging entry into the Farmer-Owned Reserve and CCC Held Inventory Programs, stock buildups typical of the 1980-85 period should be prevented, and stocks should trend more in the 1986-90 ranges.

The 1990 Farm Bill mandated a soybean marketing loan for the first time. (It was unfortunate that it was not implemented during the mid-1980s, when the Brazilian soybean acreage expansion in the newer producing states to the north might have been deterred or halted.) The U.S. soybean farmer is subject to a loan rate of $5.02 a bushel, less a 2 percent loan origination fee of $0.10 for an amount of $4.92 received. The loan rate no longer is considered a floor price, since the farmer can receive the differential between the loan rate and the lower marketing loan repayment rate, which is for all intents and purposes similar to a deficiency payment for the grains. There is no floor for prices, so if the national cash price, for example, to farmers fell to $3.00, the farmer would receive $1.92, the differential from the $5.02 loan less the $0.10 Loan Origination Fee. The same principle holds for the minor oilseeds: sunseed, canola, rapeseed, safflower, mustard seed and flaxseed.

The additional soybean farmer protection, due to the implementation of the soybean marketing loan, could spur more soybean plantings if the soybean/corn price relationship to farmers is favorable in the spring. Moreover, the perception will continue for the remaining 1995 Farm Bill years that the marketing loan will have a negative impact on South American plantings (which will open up more supply-side opportunities in the U.S.). A better perception of planting prospects will come during the spring, when the USDA releases the March 31, 1992, preliminary plantings report. The marketing loan implementation is in line with the USDA's goal of encouraging larger production levels, cognizant that the large CRP enrollment, removing some 40-45 million acres from production, will limit across-the-board acreage increases.

One of the provisions implemented in the 1990 Farm Bill, designed to attain full production and at the same time encourage plantings based on a free market environment, was the planting flexibility provision. In short, producers may plant any eligible commodity, except fruits and vegetables, on up to 25 percent of the crop acreage base. Producers will not receive deficiency payments on 15 percent of the crop base. On the remaining 10 percent of the flexible acreage, producers will receive deficiency payments only if they plant the original program crop. The base history is preserved, regardless of the eligible crop planted on flexible acres, provided the producer complies with the provisions of the programs.

An additional increased planting incentive for the minor oilseeds was allowing plantings of minor oilseeds on 0/92 acreage, without producers losing deficiency payments for other program crops. However, if producers want to remain eligible for deficiency payments, they must forego oilseed price support loans.

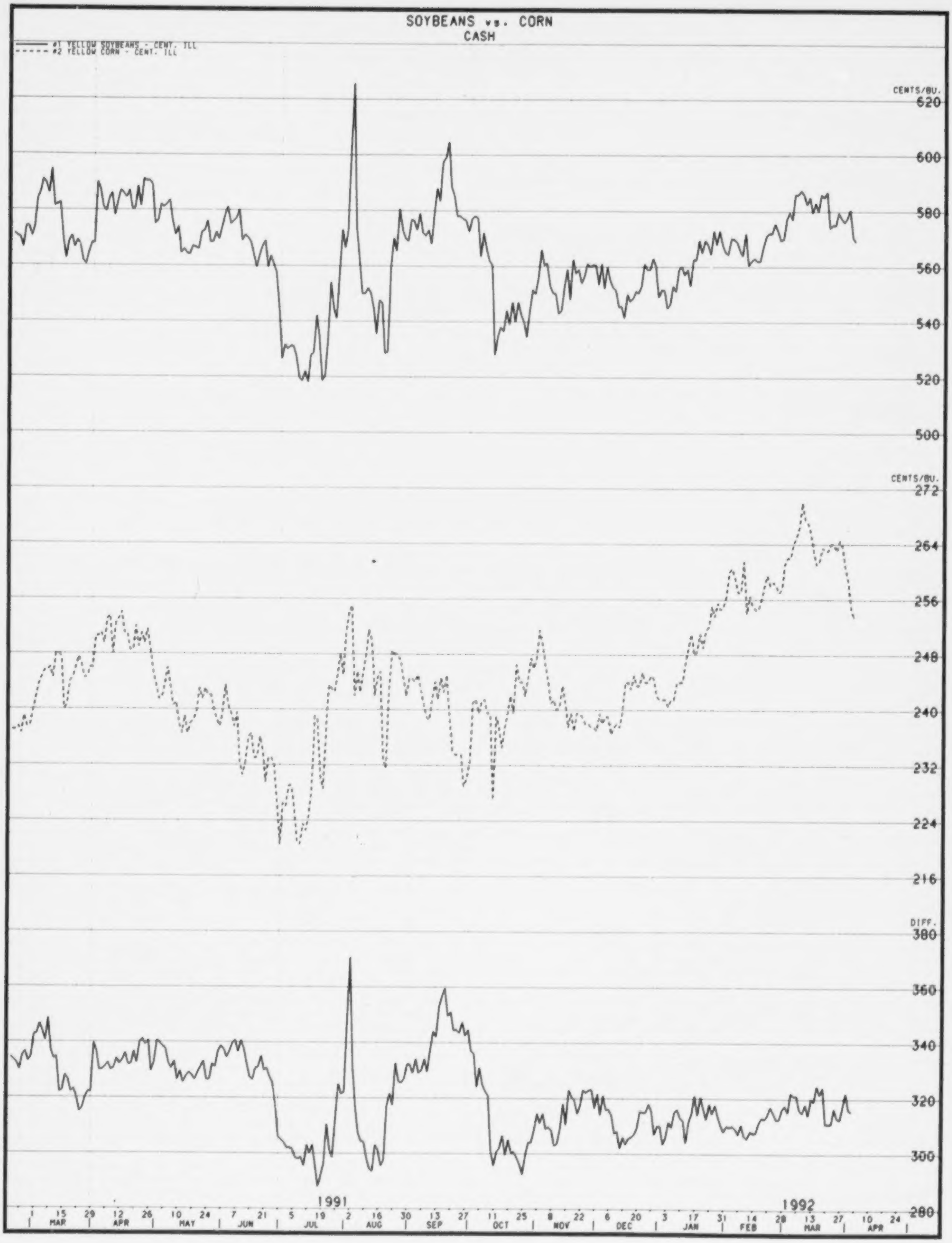
The success of the two above-mentioned provisions can best be seen in the planted acreage increases of the oilseeds and feedgrains, with the exception of oats and wheat from 1990/91 to 1991/92.

Table 15. U.S. Planted Acreage (1,000 acres)

	1990/91	1991/92
Soybeans	57,795	59,775
Sunflower Seed	1,905	2,595
Flaxseed	260	305
Corn	74,171	75,909
Sorghum	10,535	11,046
Barley	8,201	9,026
Oats	10,423	8,654
Wheat	77,241	69,906
Total	240,531	237,216

Sources: U.S. Dept. of Agriculture, AgResource Company

Note that wheat acreage for 1991/92 declined 9.5 percent, due to the high 15 percent Reduced Acreage Program and low wheat prices, and better relative price levels for the oilseeds and feedgrains. Consequently, the free market flexi-program did


SOYBEANS vs. CORN
CASH
#1 YELLOW SOYBEANS - CENT. ILL
#2 YELLOW CORN - CENT. ILL
CENTS/BU.
620
600
580
560
540
520
500
CENTS/BU.
272
264
256
248
240
232
224
216
DIFF.
380
360
340
320
300
280
1991
1992
1
15
MAR
29
12
APR
26
10
MAY
24
7
JUN
21
5
JUL
19
2
AUG
16
30
SEP
13
27
11
OCT
25
8
NOV
22
6
DEC
20
3
JAN
17
31
FEB
14
28
MAR
13
27
10
APR
24

lead to acreage shifting, reflecting the higher price levels. However, the one continuing caveat throughout the 1995 Farm Bill period will be the 40-45 million acres removed from the CRP. This will limit the universe of acreage increases, but will allow acreage shifts within program crops to reflect true free-market conditions.

The Reduced Acreage Programs (ARP) are another USDA means of motivating acreage increases or declines within various commodity groups. The 1992/93 planted acreage prospects will be in part determined by the reductions in the feedgrain ARPS, which should lead to higher acreage figures for at least corn and sorghum, though not for barley and oats, and as we already saw lower winter wheat acreage reflected in the January 13, 1992 report. A decline of 834 thousand acres from 51.049 to 50.215 million acres was reported, mostly for soft red wheat (SRW) acreage, which declined by 774 thousand acres or 7 percent to 10.578 million acres. This was more a function of poor yields and poor-quality SRW in the past few years. Farmers decided to abandon SRW, regardless of absolute prices or ratios. This was true for the Midwest, Delta and Southeast. The USDA spring wheat, feedgrains, oilseeds and cotton acreage figures will be issued on March 31, 1992.

Table 16. Reduced Acreage Plan

	1991/92	1992/93
Wheat	15%	5%
Corn	7.5%	5%
Sorghum	7.5%	5%
Barley	7.5%	5%
Oats	0.0%	0.0%

Sources: U.S. Dept. of Agriculture, AgResource Company

As a rule of thumb, the lower the ARP rate, the higher the inducement to leave the government programs and plant more acreage. Winter wheat was the exception. Other spring and durum wheat acreage is estimated to increase 2.7 million acres in 1992 for a total wheat acreage figure of 71.8 million acres, up 1.9 million acres or 2.7 percent from the 1991/92 figure of 69.9 million acres. Corn and sorghum acreage in 1992 is forecast to increase, respectively, 3.286 millon acres and 954 thousand acres to 79.237 and 11.968 million acres. Barley and oats are forecast to decline 1.188 million acres and 501 thousand acres, respectively, to levels of 7.753 and 8.153 million acres. Barley and oat acreage in 1992 will lose ground to spring wheat, corn and sorghum acreage.

The frozen feedgrain target prices reflected in Table 14., although lower than levels in the early 1985 Farm Bill years, still provide sufficient price protection for farmers to enter the programs. A cash corn target price protection level of $2.75 is a strong inducement, considering current cash prices in the range of $2.45-$2.50 a bushel. Farmers are cognizant of the impact of the Clean Air Bill on expanded ethanol production and, consequently, on strong increases in the food/industrial use category for the next several years. With corn stocks potentially approaching the 1983/84 low level of 1.006 billion bushels, corn and sorghum acreage expansion is expected.

Oilseed acreage should decline in 1992/93, due to the expected acreage increases in wheat, corn and sorghum. The minor oilseeds, particularly sunflower seed in the Northern Plains states, will lose acreage to $4.00/bu. spring wheat. Soybean/corn price relationships are currently favoring corn. In the writer's opinion, for 1992/93 the incentive of price protection offered by the marketing loan won't be a factor in soybean planting intentions. Another factor will be the continued expected decline in soybean plantings in the Southeast and Delta regions.

The increased competitiveness of U.S. export prospects will not be enhanced by the 1990 Farm Bill features, except for the continuation of low enough loan rates to maintain the competitiveness of low prices for the export markets. As mentioned previously, this feature in the 1985 Farm Bill did not suffice to augment exports versus the 1980 Farm Bill period. The continuation of the Export Enhancement Program (EEP) from the 1985 Farm Bill for wheat and soybean oil, along with the COAP and SOAP programs for cottonseed oil and sunoil, is protectionist. And if the EEP continues over time, it will negatively impact world trade, as import price levels will rise over time. The U.S. export pace will suffer, along with the other exporting nations.

The EEP was designed in 1985 to combat the inequities of the EC internal and export wheat subsidies, which placed other exporting nations at a great disadvantage. The U.S. retaliatory stance was to combat import markets where the EC had a significantly advantageous position, such as the USSR and mainland China. However, as time passed, and the U.S. became more aggressive in targeting other countries in North Africa, the Mideast, Latin America and Asia, the other wheat exporting nations of Australia, Canada and Argentina were losing market share to the U.S. Protectionism begets more protectionism.

The EC retaliated by increasing wheat plantings, and production levels soared to records in three of the past four years, which prompted more aggressive subsidies, resulting in five consecutive years of record exports. As stated previously, the U.S. wheat export pace actually declined for the period covered by the 1985 Farm Bill, versus the 1980 period.

The EEP soybean oil program was designed to compete not against South America, but only with the EC markets in North Africa, the Mideast and some of the Asian countries. However, as the U.S. expanded its EEP outlets to China and the USSR, strong perennial importers of South American soybean oil, the U.S. abandoned its Brazilian and Argentine non-compete game plan. The stage was set during the 1990/91 crop year, when the U.S. was in danger of exporting the smallest volume of soybean oil since 1955, the time of the inception of the Marshall Plan. The U.S. soybean processing industry placed a lot of pressure on the government.

At this time, any importing nation is the target of EEP, including Latin America itself. Argentina and Brazil could encounter difficulties in disposing of soybean oil during 1991/92, as world economies require subsidization. Regional free trade agreements will alter trade patterns as well, further complicating the world trade picture.

The GATT talks now appear to be headed for oblivion, due to the intransigence of the EC, so subsidies are likely to continue into the foreseeable future. Export subsidization is only a short-term panacea for alleviating trade inequities. If the USDA believes that the continuation of this program will enhance U.S. competitiveness, the agency faces a rude awakening.

Summary of the 1990 Farm Bill

The principal features of the 1985 Farm Bill, pertaining to the Export Enhancement Program, the continuity of lower loan rates and fixed target prices within the range of the last years of the 1986-90 period, were kept intact. The prospective increase in enrollment of some 7-12 million acres into the Conservation Reserve Program from 1991-1995 for a total of 40-45 million acres will further limit the universe of expanded acreage during this Farm Bill period. Even with the implementation of a soybean marketing loan, and allowing minor oilseed plantings on 0/92 acreage, full production goals probably won't be met. However, the flexi-program will enhance a more free-market environment of alternative crop options. The government has attempted to increase acreage of wheat and feedgrains by lowering the Reduced Acreage Program percentages, thereby encouraging more plantings.

The tenets of the 1990 Bill have set the stage for a more free-market environment in the U.S. over time. The Farm Bill feature of lowering costs by slowly phasing out government CCC Held Inventory and Reserve product entry levels, along with extracting fees from producers, will eventually prove to be one sector in the U.S. that is helping to alleviate the federal budget deficit. On balance, the 1990 Farm Bill was well-conceived with one remaining problem: alleviating the mushrooming world export subsidy war, which must be accomplished through the GATT process.

WORLDWIDE IMPORTANCE OF THE FORMER USSR'S OIL AND GAS PRODUCTION

BY PETER C. FUSARO

Introduction

Because of its vast resources and their importance to world energy markets, the former Soviet Union will continue to attract international attention and energy investment during the 1990s. The former nation was the world's largest oil and gas producer during the 1980s, and the new states will remain major worldwide suppliers of oil and gas for the foreseeable future.

Despite the rapid political changes occurring in the former USSR and the question of what the final configuration of the political system will be, Russia, its largest oil and gas producer, will continue to play a key role in world energy markets. Russia's resource base contains about 90 percent of the former empire's oil reserves and over 80 percent of natural gas reserves, providing a considerable amount of hard currency.

In 1991, oil revenues provided about 60 percent of hard currency needs, while natural gas contributed about 20 percent. The importance of the oil and gas industry in meeting these hard currency needs cannot be understated, since the former Soviet republics are still producers of primary products. Gold sales make up the bulk of hard currency when the need arises to raise foreign capital.

Due to lack of maintenance and investment in the energy sector during the second half of the 1980s, oil production in the republics has been declining rapidly, and gas production has remained stagnant, following a rapid increase in production. Consequently, the region's energy industry needs capital and technology at a time when its political system is undergoing uncertain and accelerating changes. These cataclysmic changes are affecting energy markets, as the continued deterioration of the country's economy breeds future unknowns into the world energy markets.

These uncertainties continue to fuel oil price volatility, especially because of concerns about the reliability of the region's exports during the winter heating season, when needs for the products are most acute. Additionally, continued uncertainties exist concerning when--and in what volumes--Kuwaiti and Iraqi oil exports will resume. This latter factor focused more attention on the Soviet export situation during much of 1991.

The former Soviet Union has been the world's largest producer of crude oil since the 1970s. Soviet oil production peaked during the 1980s at 600 million to 625 million tonnes per year (12 million to 12.5 million barrels per day). Production had been slumping since 1989, and the decline had been accelerating rapidly, so that 1991 estimates show production falling to 515 million tonnes per year, or about 10.3 million bpd on an annual basis. End-of-year production for 1991 was averaging about 10 million bpd, with estimates that output could drop to the 8.6 million bpd level in 1992. Table 1. shows the historical rise of the empire's production from 1913 to its peak in the 1980s and its evident decline at present.

The former Soviet Union's huge energy reserves guarantee that it will continue to be an important player in world energy markets. The region holds 5 to 6 percent of the world's proven oil reserves and 40 to 50 percent of world natural gas supplies. The ex-USSR has a reserves-to-production ratio of 15 to 1, and some parts of the region have not been explored at all. The region is also the world's third-largest coal producer. After 70 years of monopolistic control over these resources, the change to a market economy will not be an easy transition.

Western and Japanese companies are evaluating the reserve base and infrastructural needs of the former Soviet oil and gas industry at present, but are not committing much capital because of the rapidly changing political environment. Their investment horizon is on the longer term, when the region's energy resources can be developed under more certain political and economic conditions.

Table 1. USSR Oil Production (in millions of tonnes)

Year	Amount	Year	Amount
1913	10.3	1972	400.4
1928	11.6	1973	429.0
1932	21.4	1974	458.9
1937	28.5	1975	490.8
1940	31.1	1976	519.7
1945	19.4	1977	545.8
1950	37.9	1978	571.5
1955	70.8	1979	585.6
1960	147.9	1980	603.2
1961	166.1	1981	608.8
1962	186.2	1982	612.6
1963	206.1	1983	616.3
1964	223.6	1984	612.7
1965	242.9	1985	595.3
1966	265.1	1986	614.8
1967	288.1	1987	624.2
1968	309.2	1988	624.3
1969	328.4	1989	606.3
1970	353.0	1990	569.7
1971	377.1	1991	515.0[e]

[e] Estimated from results through October 31, 1991
Source: Provided by PlanEcon from Narkhoz SSSR. Soviet petroleum production statistics include both crude oil and gas condensate (natural gas liquids).

Soviet gas production had risen during the 1970s and 1980s, reaching a peak of 740 billion cubic meters in 1989. Like oil production, about two-thirds of the region's gas production is concentrated in Siberia. Gas exports are about evenly divided between Eastern Europe and the West. Increased gas exports could lessen Europe's dependence on OPEC oil production, as well as bring environmental benefits in Europe's substitution for oil in electric power generation. Recently, Soviet gas production has remained level, but here too, investment in gas infrastructure is critical to maintaining or increasing production. Gas pipeline and processing equipment particularly needs to be upgraded. Ambitious plans propose increasing gas production dramatically during the next twenty years.

Oil Industry Background

The Soviet oil industry began with discoveries at Baku on the Caspian Sea. Production remained relatively low, until the discovery of highly productive fields with substantial reserves during the 1950s and 1960s, first in the Volga-Urals region and later in western Siberia. Two-thirds of current production has been concentrated in western Siberia. The Samotlor field in western Siberia, discovered in 1965, is the country's largest developed oil field. Other reserves have been identified, but not yet developed. Total oil reserves are estimated at 58 billion barrels. This may be a very conservative estimate, since some areas have not been explored fully, including offshore reserves. These would include parts of the Caspian Sea and outer continental shelf, including the arctic regions. From 1960 to 1990, oil reserves increased by a factor of 3.4, while oil production increased threefold.

Because most energy demand had been met by onshore production, there had been limited development of offshore Soviet reserves. Offshore production currently accounts for about 1 million bpd, with over 70 percent coming from the Caspian Sea. Offshore developmental activity today is proceeding in the Caspian Sea, Barents Sea and offshore Sakalin Island. Recoverable offshore reserves are estimated at 9.25 billion barrels. Offshore productive output is estimated at between 2 and 3 million bpd after the year 2000. These increases should overcome losses of onshore production during the 1990s. Today, the principal oil-producing areas are western Siberia, Volga-Urals, western Kazakhstan, the shelf of the Caspian Sea, and northern European areas of Russia, although oil and gas production is undertaken in 10 of the republics. Discoveries of new oil resources in western Kazakhstan and eastern Siberia have been especially promising. The Tengiz field in Kazakhstan, with estimated reserves of 25 billion barrels of oil, of which at least 15 percent is recoverable, has been in the forefront of attention because of Chevron's efforts to develop a joint venture project there.

Soviet production has continued to concentrate on major oil fields. While it is unlikely that many new major finds will be made, more oil finds should be forthcoming. Exploration techniques will include deep drilling in order to discover more oil reserves. Production will include enhanced recovery techniques to produce more oil from existing producing fields.

The Soviet Export Program

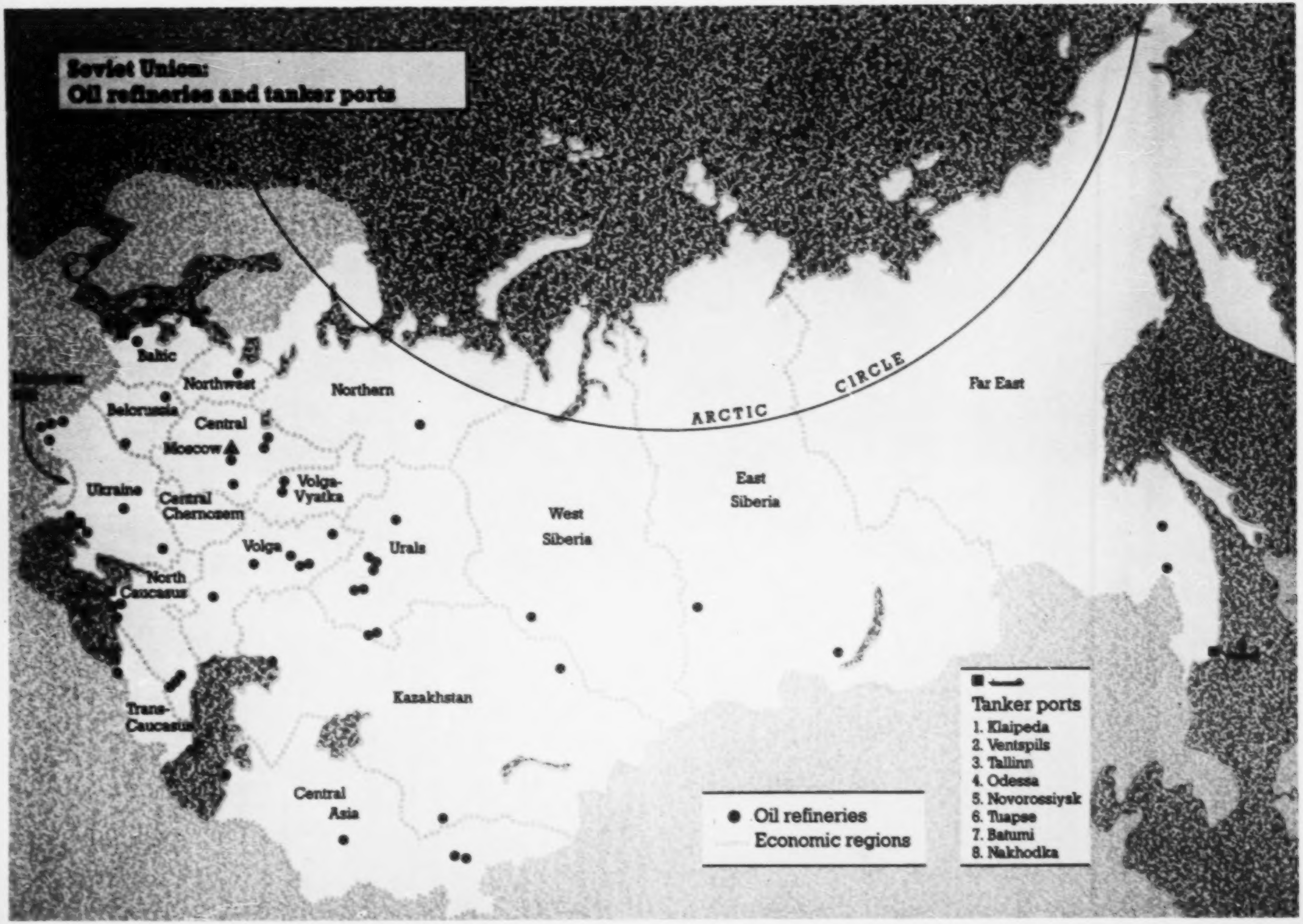
Due to the rapid production declines in the former Soviet Union during the past year, exports have fallen from 3.2 million barrels per day to about 2.2 million bpd or lower for 1991. Crude exports had been averaging 1.25 million bpd and products between 850,000 to one million bpd. By the end of 1991, exports from the region had fallen to the 2 million bpd level, according to the International Energy Agency.

Besides an active crude oil export program, the republics also produce a significant quantity of high quality heating oil (called gasoil in Europe) and fuel oil for export that is highly desired on world oil markets. The refining industry is oriented to producing distillates and fuel oil, rather than lighter products that require more sophisticated high-conversion refining capacity. While the product export program was unstable during 1991, gasoil exports actually had been up about 12 percent over the previous year. It is thought that the shift to more natural gas usage as a boiler fuel for power generation may free up more fuel oil for export in the coming years.

The Soviet refining system included 46 refineries with a capacity of 11.6 million barrels. However, conversion capacity, that is the ability to make lighter products such as gasoline and jet fuel, was only 4.5 million barrels. Because the refineries are not configured to produce gasoline, jet fuel and diesel fuel in the quantities that are needed to meet internal consumption needs, shortages of these products continue to develop and will probably increase in severity in 1992.

Another problem that has emerged because of the move toward more local autonomy within the energy sector is the organizational breakdown within the industry. This has become evident by the fact that energy officials don't know the volume of shipments or where petroleum products are going. Refiners are now allowed to sell about 20 percent of their petroleum product output freely. This lack of control has brought an almost total breakdown of the former Soviet export program, and the lack of information undermines any planning and coordination efforts. No one knows the availability of exportable gasoil and fuel oil on a week to week basis. Cargoes suddenly appear for sale on the Baltic or Black Seas when they are not expected.

The Soviet state agency, Soyuznefteexport (SNE), had been the active player in the export of both gasoil and fuel oil through the Baltic and Black Seas. On the Baltic, exports are sold through the Latvian port of Ventspils and the Lithuanian port of Klaipeda with a fee paid to the Baltic republics



Soviet Union:
Oil refineries and tanker ports

Baltic
Northwest
Belorussia
Central
Moscow
Northern
Ukraine
Central Chernozem
Volga-Vyatka
Volga
Urals
North Caucasus
Trans-Caucasus
Kazakhstan
Central Asia
West Siberia
East Siberia
Far East
ARCTIC CIRCLE
● Oil refineries
Economic regions
Tanker ports
1. Klaipeda
2. Ventspils
3. Tallinn
4. Odessa
5. Novorossiysk
6. Tuapse
7. Batumi
8. Nakhodka

for transshipment and storage space. On the Black Sea, exports are shipped from the Ukrainian ports of Odessa and Feodosiya (in the Crimea) and the Russian port of Novorossiysk. Azerbaijani oil production from oil fields near Baku must be transported via pipeline to the Georgian Black Sea port of Batumi for export. However, SNE's role has been changing, and its loss of control over exports tends to add to the present chaotic export program. In November 1991, SNE was privatized and is now called Nafta Moskva, or Moscow Oil. Some observers feel that the privatized SNE could be more flexible in selling oil for export.

Why Production Is Declining

While the republics' oil and gas reserves are quite high, there are severe economic barriers to their development in the immediate future. Production declines are due to a variety of factors. Equipment and pipe shortages and poor field management during the 1980s have led to accelerated production declines. For example, large losses occur during extraction and transportation of oil. The lack of capital, coupled with rising extraction costs to develop and produce oil, is another factor leading to production declines. Labor unrest, growing environmental awareness, and the fact that the increasingly complex geological reserves now being developed need enhanced recovery techniques provide further obstacles to maintaining current production levels. Azerbaijan continues to be a major oil field equipment-producing area, and it has been beset with labor unrest, leading to shortages in vitally needed oil field equipment, including steel pipe for oil gathering and spare parts for older wells. In 1990, it was estimated that about 3,000 producing wells were out of service, due to a lack of spare parts. Many other wells could not be drilled because of these equipment shortages.

Water flooding of fields during the 1980s has been given much attention, since the flooding significantly damaged oil-producing fields. During this process, water is injected into producing wells to increase crude oil production. The Soviet approach was to gain a fast buildup in production by the use of large-scale water flooding. This application was in contrast to Western companies that use a step-by-step approach in order to maximize recovery from oil structures. The result of the Soviet method was to damage the fields and reduce the recovery factor, i.e. the total amount of oil that could be potentially produced. This method also leads to increased water handling and the need for more wells.

Consequently, many wells have been capped, and there has not been enough drilling of new wells to offset the production decline now under way from the depletion of the large oil fields. Many observers feel that the use of sophisticated technologies through joint-venture projects can arrest the present decline in oil production and increase production by the second half of the 1990s. These technologies include the use of enhanced recovery methods such as CO_2 injection and steam injection used in the West. In fact, it has been the cutback in energy investment by the former central government that has forced the industry to look to the West for investment capital.

Joint Ventures May Westernize the Former Soviet Oil Industry

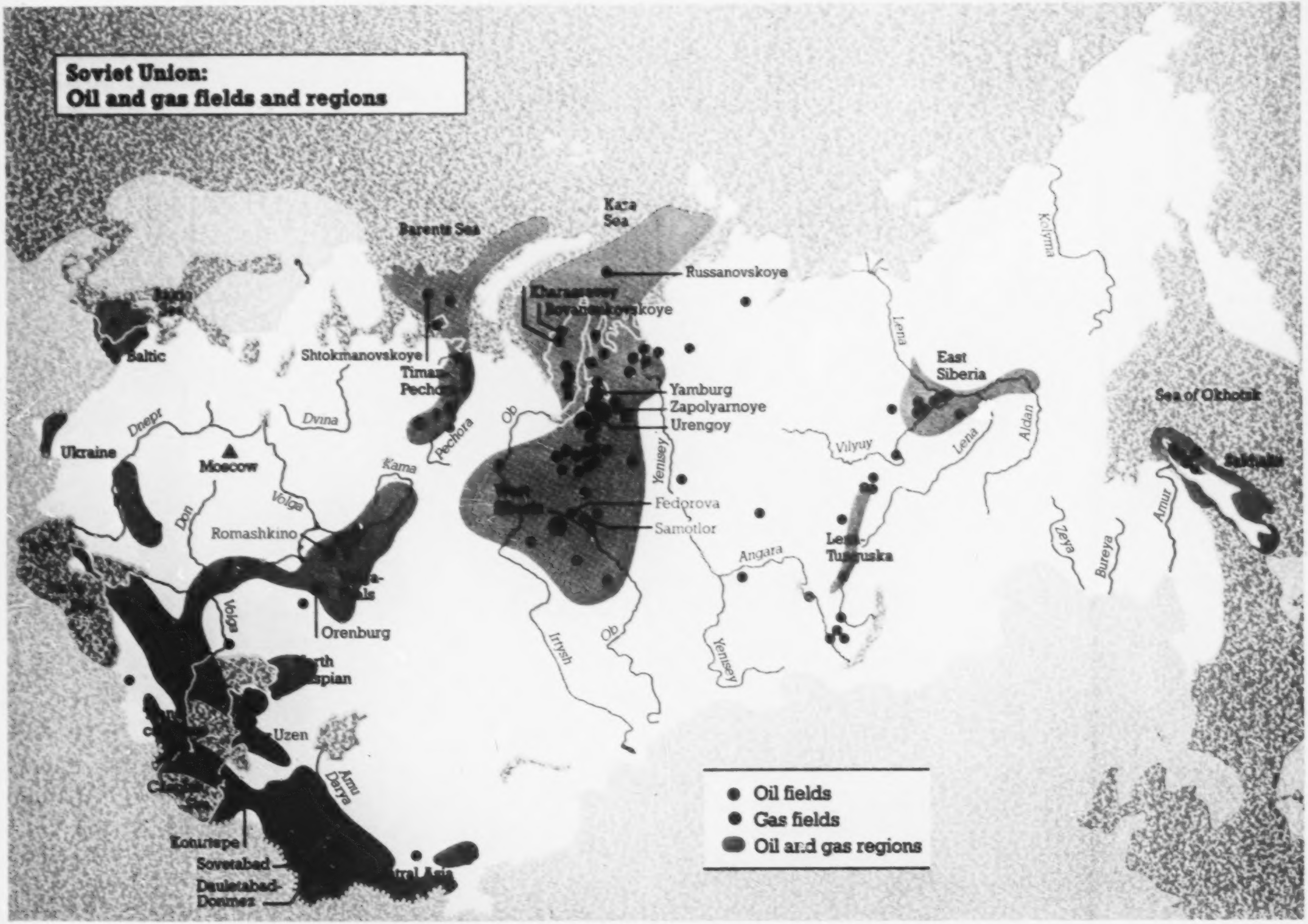
Foreign investment has been allowed in the former Soviet Union since January 13, 1987. Since that time, many joint ventures have been undertaken and discussed. Two oil joint ventures have attained much visibility. These are the White Nights project in western Siberia and the Tengiz development near the Caspian Sea.

The White Nights project was an exploration and development venture negotiated in 1990 with Siberian partner, Varyeganneftegaz, Houston-based Anglo-Suisse and Phibro Energy. The White Nights' reserve is estimated at 1.1 billion barrels, with current production at about 25,000 bpd from Tagunskoye and West Varygenakoye fields in the Tyumen region of western Siberia. Production is estimated to rise to 150,000 bpd as more fields are developed. Using horizontal drilling techniques, recoverable reserves are estimated to reach over 350 million barrels. There is no production sharing agreement in the White Nights project, which is a 50/50 joint venture. Production sharing is preferred by most oil companies in developing oil fields. A second joint venture with the same partners, called Golden Mammoth, was announced in late 1991, and this project will develop four more Siberian fields with an eventual production capacity of 600,000 bpd.

After four years of talks, the Tengiz development in Kazakhstan near the northeast coast of the Caspian Sea has been bogged down in the negotiating stage between Chevron Overseas Petroleum and its potential partners, although some protocols have been signed. The key stumbling block with this project has been that Chevron wants to own half the oil extracted because of the investment risk involved in this project.

Tengiz exploration began in 1978, and oil was found in 1979. The 25-billion-barrel supergiant field, the largest oil discovery in the world in the last 25 years, could reach 700,000 bpd when it is fully developed. Some estimates are that up to 10-11 billion barrels of oil are recoverable. The high pressure and great depths of these reserves made this project financially and technologically prohibitive for the Soviet oil industry. Estimated costs of development are as high as $10 billion. The Tengiz oil is high-quality, 44 degree gravity and 0.5 percent sulfur content, and is similar in quality to West Texas Intermediate. The first well was placed in production during 1991.

The Tengiz project highlights both the pros and cons of oil development in the former Soviet Union. Vast reserves are available for development. Capi-



Soviet Union:
Oil and gas fields and regions

Barents Sea
Kara Sea
Baltic Sea
Baltic
Ukraine
Dnepr
Moscow
Don
Volga
Romashkino
Dvina
Kama
Shtokmanovskoye
Timan-Pechora
Pechora
Volga-Urals
Orenburg
North Caspian
Uzen
Caspian
Amu Darya
Koturtepe
Sovetabad
Dauletabad-Donmez
Central Asia
Russanovskoye
Kharasavey
Bovanenkovskoye
Ob
Yamburg
Zapolyarnoye
Urengoy
Fedorova
Samotlor
West Siberia
Yenisey
Irtysh
Angara
Vilyuy
Lena
Lena-Tunguska
East Siberia
Aldan
Kolyma
Zeya
Bureya
Amur
Sea of Okhotsk
Sakhalin
● Oil fields
● Gas fields
Oil and gas regions

tal and technology are needed. Yet, a lengthy and bureaucratic negotiating process is required to get approvals to begin the production effort. Recent announcements have Saudi Arabia participating in the development of Kazakhstan's oil industry, including some participation in the Tengiz field, as well as investing in upgrading the refinery in Karaganda.

While the Tengiz and White Nights projects have captured most of the public attention on Soviet joint ventures under way with Western and Japanese companies, a number of other oil company joint ventures are under consideration. These include Elf Aquitaine in the Volga-Urals area; Shell Oil in western Siberia; Conoco in the Barents Sea and western Siberia; Total in the Volga-Urals; Texaco in Timan-Pechora; Marathon, Mitsui, and McDermott in Sakalin Island; and BP/Statoil, Unocal and Amoco in the Caspian Sea. The Amoco interest in the 1.5-billion barrel Azeri field in the Caspian Sea near Baku in Azerbaijan also includes interests of Unocal, McDermott, and BP/Statoil.

The Canadian company, Fracmaster, has also been active in the Russian republic since 1989. It has two joint ventures already in operation, one with Shell that is producing 20,000 bpd in western Siberia, and another with PanCanadian Petroleum of Calgary that is scheduled to begin production in 1992. Three other joint ventures are planned for 1992. The Fracmaster projects are for work on existing oil wells not for new drilling projects. Fracmaster gets a share of production.

The joint ventures offer access to capital, hard currency, advanced technology and managerial expertise. Some of the advanced technologies desired include the construction of oil and gas processing facilities, which will increase the value of the country's energy resources. Another desire of the former state energy complex is to pursue foreign investment in oil fields that are costly to develop, including those located in severe climate areas and the ones on the continental shelf that require deep-water drilling. Most importantly, though, the joint ventures offer a means to halt the continued deterioration of the oil reserves. Although the commercial, as well as the political, situation remains uncertain in the former Soviet Union, it seems assured that companies will continue to invest in the oil and gas sectors there during the 1990s.

The joint ventures are seen as a means of reestablishing production levels in areas which have experienced severe production declines, as well as to develop new fields. For example, oil production in Turkmenia in central Asia peaked at 324,000 bpd and now has shrunk to the 120,000 bpd level. Similarly, production in Timan-Pechora, which is located in the northeast corner of European Russia, peaked at 380,000 bpd in 1985 and is now at about 300,000 bpd. Azerbaijan was a leading oil producer before and immediately after World War II, and had production levels of 445,000 bpd in 1940 and 430,000 bpd in 1965; however, 1991 production was estimated at 260,000 bpd.

The joint ventures should move the former Soviet Union toward accepting the principle that foreign firms are on equal terms with domestic parties in terms of risk, taxes and profits. The ventures may also lead to production-sharing agreements where foreign companies own the oil that is produced.

Growing Importance of the Russian Republic

The Russian Soviet Federal Socialist Republic produced 90 percent of the former Soviet Union's oil in 1989 and 77 percent of its natural gas. The Russian Republic took over its oil and gas resources on August 20, 1991, after the aborted coup. The importance of these changes is that Russia is now holding its resources for its own hard-currency needs. Russia's oil shipments for export and to other republics have been estimated at 3.1 million bpd in 1991. If anything, the future should demonstrate a more forceful Russia, entering into more energy deals where it maintains control over more hard currency. Previously, Russian production sent for export through other republics effectively gave those republics access to hard currency, as they sold Russian output at world market prices.

Russia is also pursuing oil and gas barter deals on its own. One announced agreement is to supply Czechoslovakia with 150,000 bpd of oil in exchange for food, medical supplies and spare parts. The deal is valued at $3.5 billion, and illustrates that Eastern Europe will need to be innovative in maintaining its energy links to the former Soviet Union. Previously, the Eastern European countries were heavily subsidized in their energy relationship with the Soviet Union. Russia, of course, would like to continue to export oil and gas to Eastern Europe, while it develops new markets in the West.

Russian Interdependence with Ukraine and Byelorussia

Although Russia is the dominant crude oil producer, Russian crude and petroleum products must be transported to and through other republics. While the Ukraine and Byelorussia are small producers of crude oil, crude oil and petroleum products are refined and exported in these two republics. For example, the Friendship Pipeline transports 400,000 bpd through Byelorussia and the Ukraine. The crude oil is delivered to Poland and the Schwedt refinery in Germany. Other pipelines through Byelorussia transport products to the Baltic republics and crude oil to Central Europe totaling over 1.7 million bpd.

Byelorussia and the Ukraine are also refining centers for Russian crude oil. Petroleum products are then exported to the West or sent back to Russia. Byelorussia has two refineries, Polotsk and Mozyr, for a total capacity of 650,000 bpd. The Polotsk refinery sends products via pipeline to Ventspils in Latvia and Klaipeda in Lithuania.

The Ukraine has six refineries with a combined capacity of over 1.1 million bpd. These refineries are located at Drogobych, Odessa, Kherson, Lvov, Lisichansk, and Kremenchug. The Ukraine also is an exporter of petroleum products to the West and back to Russia. The port of Odessa exports gasoil and fuel oil, accounting for 35 percent of total Black Sea oil exports.

It seems evident that these three republics will continue their commercial ties in whatever confederation evolves. The Ukraine has been the agricultural production center, sending much of its food to Russia, while in exchange Russia sends oil to the Ukraine.

The Development of Oil Trading Exchanges

During the past two years, a number of commodity exchanges have developed in the former Soviet Union. In the spring of 1991, oil began trading on the Tyumen Oil Exchange in Russia's primary oil-producing region. During August 1991, the Moscow International Oil Exchange, comprised of the 50 largest oil producing enterprises, began operations. Volume for the first day of trading on the Moscow Exchange was 295,000 tonnes of oil (2.2 million barrels). These are not futures exchanges, but are commodities exchanges where physical cargoes of oil can be traded. They can, however, be the precursors to the development of futures trading.

One immediate impact of these oil-trading activities has been to move Soviet oil prices closer to world levels. Previously, oil prices were controlled at artificially low levels, although parity with prevailing world levels would bring an escalation to the republics' internal prices that would immediately dampen internal demand. The primary problem that must be addressed is how to make the ruble convertible without dislocating the economy.

The primary export crude has been Urals crude, which is a 32 degree, 1 percent sulfur content crude similar to the Middle East's Omani crude or Iranian Light. It has been sold in the past, using a North Sea Brent crude oil price formula. But if the New York Mercantile Exchange (NYMEX) successfully launches and establishes its sour oil contract during 1992, Urals crude traders could effectively use the NYMEX sour contract for pricing and perhaps some hedging activities. Some oil analysts feel that the Soviets secretly hedged some of their exports with futures in the past. They think that the newly emerging private sector firms will become active players on the oil futures exchanges in London and New York.

The Russian Roulette Paper Market

The Russian Roulette forward market for Soviet gasoil began in 1983, because of the former Soviet Union's need for hard currency and the oil trader's need for a large and predictable supply of gasoil. This forward market developed out of the need to make and take delivery of gasoil at a future date and at a specific location, but not all transactions result in physical delivery. The market provides opportunities for hedging, speculation and arbitrage.

The Russian Roulette forward market trades gasoil in cargo size lots of 18,000 to 22,000 tons, which are shipped to the European market on Russian vessels from the port of Ventspils and Klapeida. Because of the short trading window for this market, most trades are usually made during the first half of the month. It developed this way because the gasoil could be put into storage and sold into the barge market in time for the end of the month. Prices follow the London-based International Petroleum Exchange (IPE), which trades an active gasoil futures contract.

The greatest impediment to the viability of the Russian Roulette forward market has been the unreliability of the former Soviet export program. Because of the export of fewer cargoes at times, long paper chains were created that limited the liquidity of this market sometimes and limited its use as a hedging instrument. Despite the continuing uncertainties of the gasoil export program, the Russian Roulette forward market continues to be used by oil traders as a means to hedge gasoil exports from the Baltic ports. Russian oil exports through the Baltics stabilized at about 450,000 bpd from August 1991 through the end of the year.

Conclusion

The oil production declines in the former Soviet Union in recent years probably will be reversed during the 1990s, after the legal, administrative and political obstacles are removed. The former Soviet oil and gas industry is now developing the legal basis that not only will speed up its transition to foreign investment, but also will provide the environmental safeguards in the exploitation of its resources. Projects are under way to draw model petroleum legislation, based on Western commercial law, that will provide the basis to attract foreign capital to these oil and gas projects. The new laws will address issues such as mineral ownership, lease exploration, and private ownership.

Since 90 percent of oil production is concentrated in the territory of the Russian Republic, the Republic declared on September 24, 1991 that the Russian State Corporation ("Rosneftgas") was established to allow local control of its resources. A similar corporation was established in Kazakhstan. On November 15 and 16, 1991, Russian President Boris Yeltsin issued decrees that banned some exports of oil and tightened control on export deals, adding to confusion over Russian oil exports. The intent of these decrees was to develop a new system of export licenses that were more in line with actual export levels, not projected estimates that were not met. These internal and external changes will only exacerbate tensions between the energy-producing republics and the energy-consuming republics.

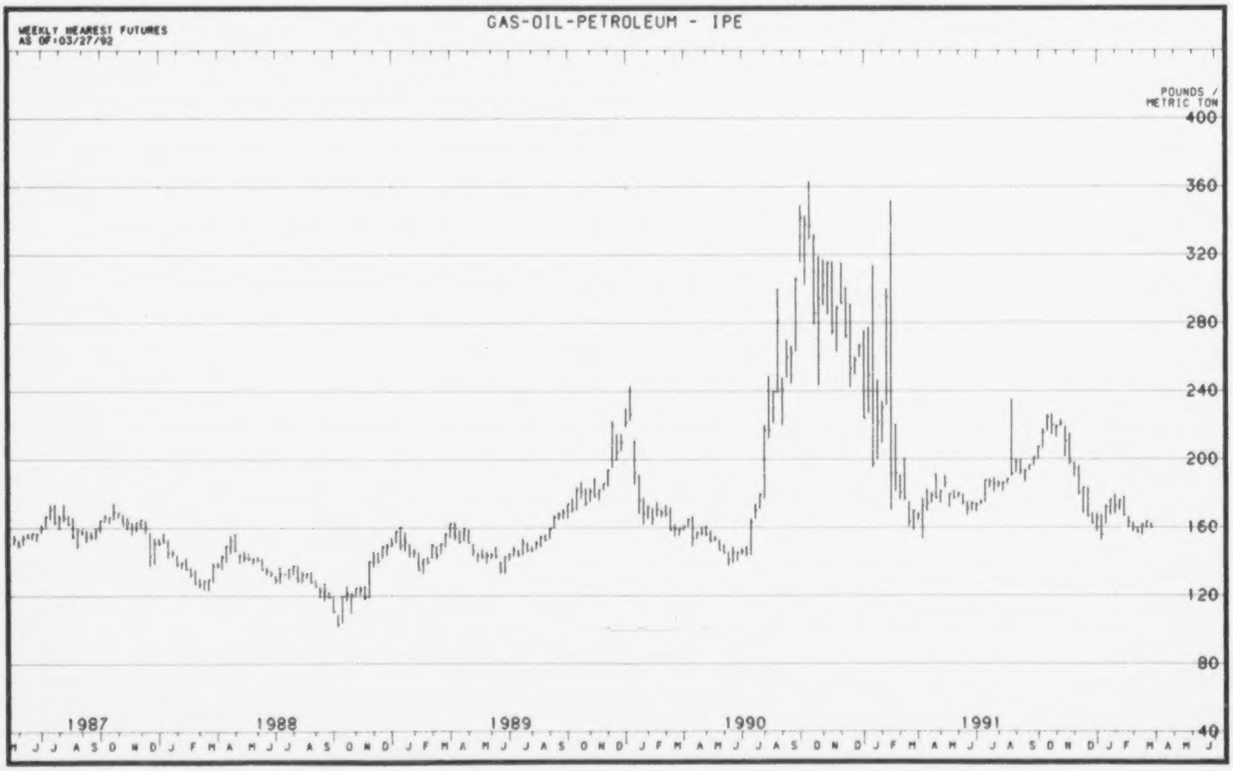
Perhaps the political change to commonwealth status will serve to lessen these economic tensions, but the transition period promises to be chaotic, confusing and painful. The currency changes that were scheduled to be introduced in January 1992 brought about a dumping of rubles for hard currency and increased inflation rates in the fall of 1991. The newly established commodity exchanges for oil tend to sell out of product for delivery quickly, as prices are bid up to high levels and participants wait for the next month's program. This may change, as the exchanges become more established and production programs more organized.

These political and economic changes should over time help to create the new institutions in the former Soviet Union necessary to oversee the continued development, production and export of crude oil, petroleum products, and natural gas. Most importantly, these agencies will be needed to predict with more certainty the supply of the country's hydrocarbons and to establish the criteria for foreign participation in oil and gas development. Policies to promote privatization and foreign investment should bring many projects to fruition faster than in the past five years.

It should be remembered that large-scale changes in national energy policy, including alternate strategies of environmental protection, can change the price of energy and other commodities. These changes will influence the development of key sectors of the former Soviet economy, including the emerging capital and labor markets.

One positive change that will occur is that the replacement of old and inefficient technologies in industrial output will give rise to greater efficiencies and a potential doubling of oil exports in the early 21st century. This change will occur because the present high use of energy per unit of output in the region's factories will fall, as a result of better productivity from using more modern equipment. Although the changes taking place in the former Soviet Union's political and economic system will take decades to implement, the energy industry should bounce back much sooner, probably by the second half of the 1990s.

*The maps of the former USSR's oil infrastructure are reprinted from *Energy in the Soviet Union and Eastern Europe*, published by the Shell Briefing Service. The author and the editors of the *CRB Commodity Year Book* would like to thank the Royal Dutch/Shell Group for their use.



U.S. FUTURES VOLUME HIGHLIGHTS

1991 in Comparison with 1990

Rank	Contracts With Volume Over 100,000	1991 CONTRACTS	%	1990 CONTRACTS	%	Rank
1.	T-Bonds, CBOT	67,887,497	25.82%	75,499,257	27.30%	(1)
2.	Eurodollar, CME	37,244,223	14.17%	34,695,625	12.55%	(2)
3.	Crude Oil, NYMEX	21,005,867	7.99%	23,686,897	8.57%	(3)
4.	S&P 500 Index, CME	12,340,380	4.69%	12,139,209	4.39%	(4)
5.	Deutschemark, CME	10,928,693	4.16%	9,169,230	3.32%	(8)
6.	Corn, CBOT	10,852,909	4.13%	11,423,027	4.13%	(5)
7.	Soybeans, CBOT	9,013,739	3.43%	10,301,905	3.73%	(6)
8.	Gold (100 oz.), COMEX	6,799,917	2.59%	9,730,041	3.52%	(7)
9.	No. 2 Heating Oil, NY, NYMEX	6,680,171	2.54%	6,376,871	2.31%	(11)
10.	T-Notes (10 Year), CBOT	6,341,432	2.41%	6,054,222	2.19%	(12)
11.	Japanese Yen, CME	6,017,012	2.29%	7,437,235	2.69%	(9)
12.	Swiss Franc, CME	5,835,480	2.22%	6,524,893	2.36%	(10)
13.	Unleaded Regular Gas, NYMEX	5,509,926	2.10%	5,205,995	1.88%	(14)
14.	Soybean Meal, CBOT	4,498,287	1.71%	4,904,471	1.77%	(15)
15.	Sugar #11, CSC	4,268,546	1.62%	5,424,801	1.96%	(13)
16.	Silver (5,000 oz.), COMEX	4,154,704	1.58%	3,913,609	1.42%	(17)
17.	Soybean Oil, CBOT	4,018,544	1.53%	4,658,302	1.68%	(16)
18.	Live Cattle, CME	3,792,824	1.44%	3,797,376	1.37%	(18)
19.	British Pound, CME	3,745,617	1.42%	3,410,333	1.23%	(19)
20.	T-Notes (5 Year), CBOT	3,386,161	1.29%	2,532,828	0.92%	(21)
21.	Wheat, CBOT	3,146,844	1.20%	2,876,270	1.04%	(20)
22.	T-Bills (90-Day), CME	2,012,079	0.77%	1,869,610	0.68%	(23)
23.	Coffee "C", CSC	1,772,648	0.67%	1,774,050	0.64%	(25)
24.	High Grade Copper, COMEX	1,640,065	0.62%	1,853,185	0.67%	(24)
25.	Cotton #2, NYCE	1,614,244	0.61%	1,534,611	0.55%	(29)
26.	Live Hogs, CME	1,582,234	0.60%	2,241,272	0.81%	(22)
27.	NYSE Composite Index, NYFE	1,486,166	0.57%	1,574,641	0.57%	(27)
28.	Wheat, KCBT	1,412,510	0.54%	1,136,234	0.41%	(33)
29.	T-Bonds, MIDAM	1,397,225	0.53%	1,461,046	0.53%	(30)
30.	Soybeans, MIDAM	1,387,923	0.53%	1,565,641	0.57%	(28)
31.	Cocoa (10 M Tons), CSC	1,233,519	0.47%	1,635,917	0.59%	(26)
32.	Canadian Dollar, CME	1,139,397	0.43%	1,408,799	0.51%	(31)
33.	Pork Bellies, CME	1,005,196	0.38%	1,303,129	0.47%	(32)
34.	US Dollar Index, NYCE	715,547	0.27%	565,194	0.20%	(37)
35.	MMI Maxi, CBOT	702,927	0.27%	951,325	0.34%	(34)
36.	Wheat, MGE	624,826	0.24%	477,043	0.17%	(38)
37.	Platinum, NYMEX	604,646	0.23%	820,934	0.30%	(35)
38.	Municipal Bond Index, CBOT	549,135	0.21%	696,861	0.25%	(36)
39.	Feeder Cattle, CME	538,495	0.20%	391,308	0.14%	(41)
40.	One Month LIBOR, CME	450,354	0.17%			
41.	Corn, MIDAM	433,480	0.16%	455,289	0.16%	(39)
42.	Natural Gas, NYMEX	418,410	0.16%	132,820	0.05%	(48)
43.	Oats, CBOT	354,953	0.14%	433,567	0.16%	(40)
44.	Orange Juice (Frozen Conc.), NYCE	287,538	0.11%	342,574	0.12%	(42)
45.	T-Notes (2 Year), CBOT	285,567	0.11%	110,789	0.04%	(49)
46.	Nikkei 225, CME	246,948	0.09%			
47.	Lumber, CME	160,521	0.06%	201,984	0.07%	(44)
48.	Wheat, MIDAM	153,949	0.06%	147,033	0.05%	(46)
49.	Sugar #14, CSC	131,791	0.05%	139,143	0.05%	(47)
50.	30 Day Interest Rate, CBOT	115,958	0.04%			
51.	Silver (1,000 oz.), CBOT	114,268	0.04%	178,801	0.06%	(45)
	Contracts w/Volume Over 100,000 1/			327,512	0.12%	
	Contracts w/Volume Under 100,000	853,731	0.32%	1,042,795	0.38%	
	TOTAL	**262,895,023**	**100.00%**	**276,535,504**	**100.00%**	

1/ Contracts over 100,000 traded in 1990 but not over 100,000 in 1991.

U.S. FUTURES VOLUME HIGHLIGHTS

1991 IN COMPARISON WITH 1990

		1991		1990		
RANK	EXCHANGE	CONTRACTS	%	CONTRACTS	%	RANK
1.	Chicago Board of Trade	111,311,333	42.34%	120,769,784	43.67%	(1)
2.	Chicago Mercantile Exchange	87,135,012	33.14%	84,837,757	30.68%	(2)
3.	New York Mercantile Exchange	34,353,073	13.07%	36,357,871	13.15%	(3)
4.	Commodity Exchange	12,594,686	4.79%	15,496,931	5.60%	(4)
5.	Coffee Sugar & Cocoa Exchange	7,406,618	2.82%	8,973,911	3.25%	(5)
6.	MidAmerica Commodity Exchange	3,681,880	1.40%	3,975,528	1.44%	(6)
7.	New York Cotton Exchange	2,700,171	1.03%	2,746,209	0.99%	(7)
8.	New York Futures Exchange	1,547,372	0.59%	1,656,968	0.60%	(8)
9.	Kansas City Board of Trade	1,498,220	0.57%	1,187,083	0.43%	(9)
10.	Minneapolis Grain Exchange	627,348	0.24%	478,077	0.17%	(10)
11.	Chicago Rice & Cotton Exchange	39,310	0.01%	55,385	0.02%	(11)
	TOTAL	**262,895,023**	**100.00%**	**276,535,504**	**100.00%**	

U.S. FUTURES CONTRACTS TRADED 1987 – 1991

	CONTRACT UNIT	1991	1990	1989	1988	1987
Wheat	5,000 bu	3,146,844	2,876,270	3,237,709	3,377,738	1,929,306
Corn	5,000 bu	10,852,909	11,423,027	9,270,784	11,105,516	7,253,212
Oats	5,000 bu	354,953	433,567	349,836	354,578	291.108
Soybeans	5,000 bu	9,013,739	10,301,905	9,634,802	12,497,096	7,378,760
Soybean Oil	60,000 lbs	4,018,544	4,658,302	4,300,797	4,896,194	3,912,417
Soybean Meal	100 tons	4,498,287	4,904,471	4,486,865	5,313,081	3,797,970
Diammonium Phosphate	100 tons	10,931				
Silver	5,000 oz	640	2,256	2,397	4,165	12,092
Silver	1,000 oz	114,268	178,801	254,713	481,566	509,965
Gold	100 oz	825	7,814	73,362	84,965	24,893
Gold	Kilo	17,873	36,649	27,994	103,335	159,627
GNMA Mrtges, CDR	$100,000					7,583
T–Bonds	$100,000	67,887,497	75,499,257	70,303,195	70,307,872	66,841,474
T–Notes (6 1/2–10 yr)	$100,000	6,341,432	6,054,222	6,109,518	5,200,949	5,253,791
T–Notes (5–year)	$100,000	3,386,161	2,532,828	1,781,880	506,595	
T–Notes (2–year)	$200,000	285,567	110,789			
Cash T–Note (2 Year)	$500,000	158				
Japanese Government Bonds	20 Million Yen		3,062			
30–Day Interest Rate	$5,000,000	115,958	81,300	68,223	19,476	
Corporate Bond Index	$1,000 x Index				49	10,591
Mortgage Backed 8.0%	$100,000	291				
Mortgage Backed 8.5%	$100,000	1,581				
Mortgage Backed 9.0%	$100,000	2,744	5,294			
Mortgage Backed 9.5%	$100,000	1,163	11,554	24,815		
Municipal Bond Index	$1,000 x Index	549,135	696,861	1,068,028	1,274,316	1,613,107
3 Year Swap	25 Million	1,231				
5 Year Swap	25 Million	5,675				
CBOE 250 Index	$500xCBOE 250			13,945	55,840	
TOPIX	5,000 Yen x Index		230			
Institutional Index	$500 x Index					175
MMI Maxi	$500 x Index	702,927	951,325	1,086,550	1,175,531	2,630,887
CHICAGO BOARD OF TRADE		**111,311,333**	**120,769,784**	**112,095,413**	**116,758,862**	**101,626,958**

	CONTRACT UNIT	1991	1990	1989	1988	1987
Live Hogs	40,000#	1,582,234	2,241,272	1,891,905	2,008,750	2,040,478
Pork Bellies, Fzn.	40,000 lbs	1,005,196	1,303,129	1,310,976	1,186,599	1,097,010
Broilers	40,000 lbs	5,956				
Live Cattle	40,000#	3,792,824	3,797,376	4,265,710	5,477,205	5,229,294
Feeder Cattle	44,000 lbs	538,495	391,308	465,274	702,438	645,877
Lumber	160,000 bd.ft.	160,521	201,984	273,903	371,489	437,089
Gold	100 oz				137	261,639
T-Bills (90-day)	$1,000,000	2,012,079	1,869,610	1,502,384	1,373,553	1,927,006
Domestic CD (90-day)	$1,000,000					98
Eurodollar (3-month)	$1,000,000	37,244,223	34,695,625	40,818,269	21,705,223	20,416,216
Dollar/Pound Diff	$1,000,000	12	1,064	9,618		
Dollar/Mark Diff	$1,000,000		1,478	12,598		
Dollar/Yen Diff	$1,000,000		3,727	9,390		
One Month LIBOR	$3,000,000	450,354	84,148			
European Currency Unit	125,000					300
BP/DM Cross	50,000xbp/dm X	3,605				
DM/JY Cross	125,000xdm/jy X	8,561				
DM/SF Cross	125,000xdm/sf X	1,409				
British Pound	62,500	3,745,617	3,410,333	2,518,232	2,616,068	2,592,177
Canadian Dollar	100,000	1,139,397	1,408,799	1,263,664	1,408,783	914,563
Deutschemark	125,000	10,928,693	9,169,230	8,186,221	5,662,109	6,037,048
Japanese Yen	12,500,000	6,017,012	7,437,235	7,823,739	6,433,132	5,358,556
Swiss Franc	125,000	5,835,480	6,524,893	6,093,885	5,283,406	5,268,276
Australian Dollar	100,000	76,016	105,241	113,972	75,960	53,335
French Franc	250,000		50	2,030	3,932	10,437
Nikkei 225	$5 x Index	246,948	52,046			
S&P 500 Index	$500 x Index	12,340,380	12,139,209	10,560,455	11,353,898	19,044,673
CHICAGO MERCANTILE EX.		**87,135,012**	**84,837,757**	**87,122,225**	**65,662,682**	**71,334,072**
Rice, Rough New	200,000 lbs	39,310	55,385	50,201	47,627	31,114
CHIC. RICE & COTTON EX.		**39,310**	**55,385**	**50,201**	**47,627**	**31,114**
Coffee "C"	37,500 lbs	1,772,648	1,774,050	1,328,953	1,149,710	964,586
Sugar #11	112,000 lbs	4,268,546	5,424,801	6,243,361	5,819,121	3,853,499
Sugar #14	112,000 lbs	131,791	139,143	102,654	84,999	69,928
White Sugar	50 M tons	20			726	903
Cocoa	10 M tons	1,233,519	1,635,917	1,341,850	1,268,050	895,465
Euro-Diff Coffee	37,500 lbs	94				
Int'l Market Index	$250 x Index			496		
CPI-W	$1,000 x Index					2
COFFEE SUGAR & COCOA EX.		**7,406,618**	**8,973,911**	**9,017,314**	**8,322,606**	**5,784,383**
Copper	25,000 lbs			1,929,095	2,112,459	2,569,178
High Grade Copper	25,000 lbs	1,640,065	1,853,185	167,452	924	
Aluminum	40,000 lbs		96	741	2,610	8,500
Silver	5,000 oz	4,154,704	3,913,609	4,376,611	4,664,655	5,055,652
Gold	100 oz	6,799,917	9,730,041	9,988,577	9,496,402	10,239,805
Moody's Index	$500 x MCBI					11,482
COMMODITY EXCHANGE		**12,594,686**	**15,496,931**	**16,462,476**	**16,277,050**	**17,884,617**
Wheat (5,000 bu)	5,000 bu	1,412,510	1,136,234	1,236,084	1,338,711	971,095
Grain Sorghum	5,000 bu	1,064	1,210	9,253		
Value Line Index	$500 x Index	57,705	35,558	41,268	79,872	505,551
Mini Value Line	$100 x Index	26,941	14,081	8,390	14,171	28,457
KANSAS CITY BD. OF TRD.		**1,498,220**	**1,187,083**	**1,294,995**	**1,432,754**	**1,505,103**

	CONTRACT UNIT	1991	1990	1989	1988	1987
Wheat	1,000 bu	153,949	147,033	347,127	294,236	189,610
Corn	1,000 bu	433,480	455,289	389,592	429,219	311,722
Oats	1,000 bu	4,681	13,502	13,317	12,917	6,958
Soybeans	1,000 bu	1,387,923	1,565,641	1,341,983	863,934	417,620
Soybean Meal Old	20 tons					17
Soybean Meal New	20 tons	3,610	5,437	6,209	8,558	3,191
Live Cattle	20,000#	16,937	19,284	26,750	48,349	44,112
Live Hogs	20,000#	19,388	29,533	33,255	34,230	44,364
New York Silver	1,000 oz	13,106	11,005	13,562	12,063	9,578
New York Gold	33.2 oz	6,785	15,084	9,698	14,652	17,957
Platinum	25 oz	562	1,012	1,654	2,874	4,342
Copper	12,500 lbs					2
Copper New	55,000 lbs					29
T-Bonds	$50,000	1,397,225	1,461,046	1,307,416	1,414,390	1,015,454
T-Bills	$500,000	1,297	3,884	8,541	22,203	25,592
T-Notes	$50,000	4	9	177	4,159	
British Pound	12,500	30,019	25,846	24,054	28,240	10,979
Swiss Franc	62,500	74,349	75,819	60,949	77,176	97,571
Deutschemark	62,500	93,577	82,534	53,954	49,993	85,009
Japanese Yen	6,250,000	40,958	54,283	59,133	44,257	58,836
Canadian Dollar	50,000	4,030	9,287	6,528	9,282	7,749
MIDAMERICA COMMODITY EX.		**3,681,880**	**3,975,528**	**3,703,899**	**3,370,732**	**2,350,692**
Wheat	5,000 bu	624,826	477,043	413,073	423,542	310,599
White Wheat	5,000 bu	2,406	1,014	4	380	1,415
High Fructose Corn Syrup	48,000 lbs				49	5,963
Oats	5,000 bu	116	20	150	1,807	
MINNEAPOLIS GRAIN EX.		**627,348**	**478,077**	**413,227**	**425,778**	**317,977**
Cotton #2	50,000 lbs	1,614,244	1,534,611	1,649,120	1,370,249	1,395,980
Orange Jce, Fzn. Conc.	15,000 lbs	287,538	342,574	304,104	358,039	266,641
Propane	100,000 gal					5,799
European Currency Unit	$100,000	1,691	12,150	16,042	23,936	42,198
U.S. Dollar Index	$500 x Index	715,547	565,194	743,299	446,525	403,783
Five Year Treasury Note	$100,000	71,220	222,271	465,609	789,630	383,613
Two Year Treasury Note	$200,000	9,931	69,409	133,423		
NEW YORK COTTON EX.		**2,700,171**	**2,746,209**	**3,311,597**	**2,988,379**	**2,498,014**
NYSE Composite Index	$500 x Index	1,486,166	1,574,641	1,579,704	1,668,732	2,915,915
Russell 2000	$500 x Index				32	5,644
Russell 3000	$500 x Index					10,734
T-Bond (30 Year)	$100,000	21	12,094	34,399		
Cmdty Rsrch Bureau Index	$500 x Index	61,185	70,233	124,548	205,951	136,832
NEW YORK FUTURES EX.		**1,547,372**	**1,656,968**	**1,738,651**	**1,874,715**	**3,069,125**
Palladium	100 oz	78,199	95,642	208,092	139,883	160,284
Platinum	50 oz	604,646	820,934	1,190,529	1,460,455	1,361,546
Potatoes(Cash Settlement)	100,000 lbs					6,240
No. 2 Heating Oil, NY	1,000 bbl	6,680,171	6,376,871	5,740,967	4,935,015	4,293,395
Leaded Reg. Gasoline, NY	1,000 bbl					
Unleaded Gasoline, NY	1,000 bbl	5,509,926	5,205,995	4,484,558	3,292,055	2,056,238
Residual Fuel Oil	1,000 bbl		76	605		
Natural Gas	10,000 MMBTU	418,410	132,820			
Propane	42,000 gal	55,854	38,636	14,664	23,749	15,312
Crude Oil	1,000 bbl	21,005,867	23,686,897	20,534,865	18,858,948	14,581,614
NEW YORK MERCANTILE EX.		**34,353,073**	**36,357,871**	**32,174,280**	**28,710,105**	**22,474,629**
TOTAL FUTURES		**262,895,023**	**276,535,504**	**267,384,278**	**245,871,290**	**228,876,684**
PERCENT CHANGE		**−4.93%**	**3.42%**	**8.75%**	**7.43%**	**24.20%**

U.S. OPTIONS VOLUME HIGHLIGHTS

1991 IN COMPARISON WITH 1990

		1991		1990		
RANK	EXCHANGE	CONTRACTS	%	CONTRACTS	%	RANK
1.	Chicago Board of Trade	28,125,965	45.22%	33,461,799	52.20%	(1)
2.	Chicago Mercantile Exchange	20,993,604	33.75%	18,156,855	28.32%	(2)
3.	New York Mercantile Exchange	6,433,641	10.34%	6,100,856	9.52%	(3)
4.	Commodity Exchange	2,528,969	4.07%	2,786,690	4.35%	(5)
5.	Coffee Sugar & Cocoa Exchange	2,088,136	3.36%	3,020,526	4.71%	(4)
6.	New York Cotton Exchange	1,866,508	3.00%	447,688	0.70%	(6)
7.	Kansas City Board of Trade	91,060	0.15%	65,794	0.10%	(7)
8.	New York Futures Exchange	38,237	0.06%	29,045	0.05%	(9)
9.	MidAmerica Commodity Exchange	29,663	0.05%	29,310	0.05%	(8)
10.	Minneapolis Grain Exchange	6,122	0.01%	4,531	0.01%	(10)
	TOTAL	**62,201,905**	**100.00%**	**64,103,094**	**100.00%**	

U.S. OPTIONS CONTRACTS TRADED 1987 – 1991

OPTION	CONTRACT UNIT	1991	1990	1989	1988	1987
Corn	5,000 bu	2,048,422	2,116,302	1,519,164	1,591,223	661,519
Soybeans	5,000 bu	2,165,167	2,089,382	1,975,440	3,245,134	1,242,072
Oats	5,000 bu	4,486	7,334			
Wheat	5,000 bu	692,327	482,941	484,952	445,575	124,598
Soybean Oil	60,000 lbs	78,991	138,089	101,158	124,131	85,735
Soybean Meal	100 tons	116,433	181,429	112,474	172,428	81,213
Silver	1,000 oz	2,804	1,398	8,346	8,303	10,009
T-Bonds	$100,000	21,925,578	27,315,411	20,784,019	19,509,425	21,720,402
T-Notes (10 Year)	$100,000	890,293	936,754	1,168,196	1,011,626	1,421,852
T-Notes (5 Year)	$100,000	129,389	87,440			
Japanese Government Bonds	20 Million Yen		475			
Mortgage Backed 8.0%	$100,000	831				
Mortgage Backed 8.5%	$100,000	5,079				
Mortgage Backed 9.0%	$100,000	3,847	3,394			
Mortgage Backed 9.5%	$100,000	160	15,837	13,564		
3 Year Swaps	25 Million	530				
5 Year Swaps	25 Million	5,877				
Muni Bonds	$1,000 x Index	52,692	85,613	88,591	171,788	118,632
Major Market Index	$500 x Index	3,059				
CHICAGO BOARD OF TRADE		**28,125,965**	**33,461,799**	**26,255,904**	**26,279,633**	**25,466,032**
Live Hogs	40,000 #	112,338	171,306	127,258	130,206	147,859
Live Cattle	40,000 #	776,624	713,276	886,858	1,067,593	1,222,397
Broilers	40,000 lbs	2,646				
Pork Bellies	40,000 lbs	32,780	46,286	53,643	12,143	15,112
Feeder Cattle	44,000 lbs	168,966	168,310	152,483	163,433	134,830
Lumber	160,000 bd.-ft.	8,117	29,717	17,450	22,171	6,483
One Month LIBOR	$3,000,000	74,805				
Eurodollar	$1,000,000	7,874,551	6,859,625	6,001,522	2,599,839	2,569,957
T-Bill	$1,000,000	49,261	32,283	16,713	5,916	11,634
BP/DM Cross	50,000bp/dm X	968				
DM/JY Cross	125,000dm/jy X	3,373				
DM/SF Cross	125,000dm/sf X	756				

OPTION	CONTRACT UNIT	1991	1990	1989	1988	1987
British Pound	62,500	650,472	501,187	405,993	543,380	569,062
Deutschemark	125,000	5,643,031	3,430,374	3,795,135	2,734,079	3,125,687
Swiss Franc	125,000	998,002	1,130,447	1,488,682	1,069,798	1,053,323
Japanese Yen	12,500,000	2,397,141	3,116,130	3,127,247	2,944,889	2,250,813
Canadian Dollar	100,000	336,758	283,609	274,362	313,901	48,690
Australian Dollar	100,000	37,519	27,381	23,257	6,811	
Nikkei 225	$5 x Index	12,378	8,793			
S&P 500	$500 x Index	1,813,118	1,638,131	1,161,629	734,827	1,877,295
CHICAGO MERCANTILE EX		**20,993,604**	**18,156,855**	**17,532,232**	**12,348,986**	**13,033,142**
Sugar	112,000 lbs	1,512,976	2,393,016	1,932,752	1,536,345	432,927
Coffee	37,500 lbs	411,550	282,566	114,216	65,204	25,639
Cocoa	10 M tons	163,610	344,944	153,562	95,509	13,910
COFFEE SUGAR & COCOA EX		**2,088,136**	**3,020,526**	**2,200,530**	**1,697,058**	**472,476**
Gold	100 oz	1,398,451	1,931,804	1,603,799	1,698,696	2,080,067
5 Day Gold	100 oz	13,464				
Silver	5,000 oz	1,019,093	747,499	752,645	872,106	918,064
5 Day Silver	5,000 oz	798				
High Grade Copper	25,000 lbs	97,163	107,387	12,310	2	
Copper	25,000 lbs			221,725	402,790	612,850
COMMODITY EXCHANGE		**2,528,969**	**2,786,690**	**2,590,479**	**2,973,594**	**3,610,981**
Wheat	5,000 bu	91,060	65,794	38,169	30,178	33,228
KANSAS CITY BD OF TRADE		**91,060**	**65,794**	**38,169**	**30,178**	**33,228**
Soybeans	1,000 bu	19,797	23,578	20,019	21,043	12,317
Soft Red Winter Wheat	5,000 bu	2,917	3,408	1,672	533	530
Corn	1,000 bu	4,581				
U.S. T−Bonds	$50,000	2,113				
Gold	33.2 oz	255	2,324	1,660	77	74
MIDAMERICA COMMODITY EX		**29,663**	**29,310**	**23,351**	**21,653**	**12,921**
American Spring Wheat	5,000 bu	5,132	4,509	2,104	1,847	1,229
European Spring Wheat	5,000 bu		22	12		
White Wheat	5,000 bu	990				
MINNEAPOLIS GRAIN EXCH		**6,122**	**4,531**	**2,116**	**1,847**	**1,229**
Cotton	50,000 lbs	392,132	284,991	424,841	124,260	73,480
Orange Juice, Fzn. Conc.	15,000 lbs	56,078	63,029	13,175	5,873	685
Five Year U.S. T−Note	$100,000			1,278	13,479	
U.S. Dollar Index	$500 x Index	1,418,298	99,668	4,844	10,525	14,538
NEW YORK COTTON EXCH		**1,866,508**	**447,688**	**444,138**	**154,137**	**88,703**
NYSE Composite Index	$500 x Index	34,570	25,501	39,482	23,304	206,631
CRB Index	$500 x Index	3,667	3,544	3,546	1,007	
NEW YORK FUTURES EXCH		**38,237**	**29,045**	**43,028**	**24,311**	**206,631**
Heating Oil	42,000 gal	863,143	406,810	298,136	125,812	143,605
Crude Oil	1,000 bbl	4,968,742	5,254,612	5,685,953	5,480,281	3,117,037
Unleaded Gasoline	1,000 bbl	573,767	435,685	332,094		
Platinum	50 oz	27,989	3,749			
NEW YORK MERCANTILE EX		**6,433,641**	**6,100,856**	**6,316,183**	**5,606,093**	**3,260,642**
TOTAL OPTIONS		**62,201,905**	**64,103,094**	**55,446,130**	**49,137,490**	**46,185,985**
PERCENT CHANGE		**−2.97%**	**15.61%**	**12.84%**	**6.39%**	**45.38%**

SOURCE: FUTURES INDUSTRY ASSOCIATION

Volume & Open Interest, Worldwide

	1991	1990	1989	Year-End 1991 Open Int.
Gold	1,172	14,781	60,604	0
Gold Options	7,452,730	6,000,859	6,953,149	284,851
U.S. Denominated Coffee Futures	12,931			2,253
U.S. Denominated Coffee Options	734			391
U.S. Denominated Cotton	179			2
U.S. Denominated Live Cattle	1,561			111
U.S. Dollar Futures	949,081	608,203	862,018	32,059
U.S. Dollar Options			25,325	25,200
U.S. Dollar Call Options on Actuals	71,092			
U.S. Dollar Put Options on Actuals	73,900			
U.S. Floating Dollar Call Options	19,680			
1-Day Interbanking Deposits	835,209			
30-Day Interbanking Deposits	805			
Interest Rate Futures	2,495,412			137,194
Government T-Bonds	112,329	711,097	189,260	
Bovespa Stock Index Futures	7,836,256	2,540,256		12,796
BM&F, Brazil	19,027,057	9,875,196	8,090,356	494,857
DAX	1,251,453	51,363		25,347
BUND	2,282,896	59,665		28,639
DAX Options	2,045,707			275,379
BUND Options	163,766			22,305
Medium Term Notional Bond (BOBL)	235,729			14,169
DTB, Germany	5,979,551	111,028		365,339
Gold Options	132,956	218,564	232,574	9,521
Silver Options			3,963	
Dollar/Guilder Options	370,647	181,505	3,963	26,828
Pound/Sterling/Guilder Options	2,729	18,758	17,906	
Dutch Gov't Bond Options	240,767	260,771	486,232	35,463
EOE Stock Index Options	2,355,299	1,975,365	1,977,778	148,506
Bond Index Options			198,422	
Eurotop 100	9,632			928
Dutch Top 5 Index	329,509	173,930		13,995
Major Market Index Options	28,410	27,283	17,084	81,601
European Options Exchange	3,469,949	2,856,176	3,385,479	316,842
EOE Stock Index (FTI)	484,937	437,002	252,259	11,196
Dutch Top 5 Index	46,740	42,336		745
Eurotop 100 Index	1,265			38
Deliverable Bond (FTO)	28,545	53,798	69,975	798
U.S. Dollar/Guilder (FUS)	1,901			401
Financial Futures Market - Amsterdam	563,388	533,136	322,234	13,178
Arabica Coffee	3,469			
Arabica Options	12			
Barley	10,919			
Barley Options	190			
BIFFEX (Baltic Freight Index)	63,155	69,340	87,720	
BIFFEX Options	59			
Cocoa	1,536,752	1,701,586	1,554,591	
Cocoa Options	89,636	152,328	61,777	
Coffee (Robusta)	1,195,789	1,170,176	975,679	
Coffee Options	17,568	42,881	10,315	
$ Coffee	125,606			
$ Coffee Options	19,230			
Commercial Property	7,493			
Commercial Rent	563			
Hi Pro Soy	22,105	4,722		

	1991	1990	1989	Year-End 1991 Open Interest
Hi Pro Soy Options	7,465	2,778		
Lamb	259			
MGMI Metal Index	72,448	64,176		
MGMI Options	802	414		
Mortgage Interest Rate	775			
Pigs	14,102	10,950	6,291	
Pigs Options	207			
Potatoes in Bulk	29,300	65,507	99,036	
Potato Options	20	30	140	
Residential Property	4,867			
Rice	475	303		
Rubber		3,504		
Soymeal		11,736	41,942	
Sugar (FOB)	252,457	896,400	1,253,573	
Sugar Options	594	31,286	80,448	
Wheat	33,733			
Wheat Options	1,160			
White Sugar	313,514	346,500	336,553	
White Sugar Options	696	7,303	2,565	
Futures & Options Exchange, UK	3,811,247	4,500,870	4,275,501	
Danish Government Bonds	282,575	22,298		7,974
9% 2006 Mortgage Bonds	99,863	328,769		950
Danish Government Bond Options	52,940			3,334
9% 2006 Mortgage Bond Options	35,492	86,891		78
KFX Stock Index	336,331	243,427		3,415
KFX Stock Index Options	134,581	54,668		6,121
Stock Options	142,765	3,393		6,721
Guarantee Fund Danish OPT&FUT	1,084,547	739,446		28,593
Crude Oil	5,230,892	4,083,092	1,671,786	
Crude Oil Options	232,118	153,278	60,589	
Heavy Fuel Oil		2,064	4,203	
Dubai Crude	3,629	2,681		
Naptha	27,804			
Gasoil	2,854,961	2,603,095	1,957,356	
Gasoil Options	91,089	101,963	35,045	
International Petroleum Exchange, UK	8,440,493	6,946,173	3,728,979	
DIBOR	27,637	37,505		1,005
Long Gilt	9,664	8,120		190
Short Gilt	3,046	1,409		115
ISEQ Index	288	399		5
Irish Futures & Options Exchange	40,635	47,433		1,315
Crude Palm Oil	320,199	241,984	261,871	6,420
Tin	156	3,133	10,702	
RBD Palm Olein	2,240	10,687		
Cocoa	2,376	7,721	12,016	375
Kuala Lumpur Commodity Exchange	324,971	263,525	284,589	6,427
Financial Times Index	1,727,382	1,443,829	1,028,014	32,230
Three Month Pound (1/2M)	8,064,449	8,354,922	7,131,345	149,365
Long Gilt	5,639,081	5,643,247	4,062,472	
3 Month ECU	114,810	64,242	15,884	47,589
Eurodollar	993,753	1,248,693	2,063,606	32,506
T-Bond	462,703	756,201	966,880	2,781
Eurotrac 100	2,721			108
Yen Bond	106,081	46,215	117,068	
Italian Government Bond	483,447			15,419

	1991	1990	1989	Year-End 1991 Open Interest
Euroswiss	547,883			23,580
Euromark	4,783,649	2,659,641	951,634	166,094
ECU Bond	54,233			4,615
German Government Bund	10,112,305	9,581,516	5,330,028	93,821
Eurodollar Options	30,628	65,433	81,539	4,568
Euromark Options	514,075	248,028		61,456
T-Bond Options	39,798	86,864	75,863	1,707
Sterling Currency			4,611	
German Government Bund Options	2,452,554	1,804,178	468,981	158,774
Gilt Options	843,561	789,977	726,663	38,217
Short Sterling Options	1,594,268	1,376,543	824,110	81,139
Italian Government Bond Options	16,446			5,844
LIFFE, UK	38,583,877	34,169,529	23,849,759	919,813
High Grade Primary Aluminum	5,732,302	4,355,720	3,036,892	188,967
Copper - Grade A	7,384,841	5,993,965	4,520,793	157,055
Standard Lead	706,795	611,756	576,671	15,934
Primary Nickel	731,625	582,210	482,995	20,515
Special High Grade Zinc	2,022,384	1,448,107	779,704	57,403
High Grade Zinc			550,682	
Tin	359,962	361,196	129,180	4,712
London Metal Exchange, UK	16,937,909	13,352,954	10,076,917	444,586
4 Year BTAN T-Note			27,866	
3 Month Eurodeutschemark	285	393,850	613,748	
3 Mth Eurodeutschemark Options	400	109,445		
CAC 40 Index	2,311,196	1,641,398	581,473	23,016
ECU Bond	546,273	56,292		5,026
ECU Bond Options	21,179			1,700
Italian Bond	148,491			100
Italian Bond Options	890			
Notional Bond	21,087,899	15,996,096	15,004,901	118,055
Notional Bond Options	8,411,903	7,410,305	7,149,559	246,955
3 Month Pibor	3,000,111	1,900,851	2,296,356	47,484
3 Month Pibor Options	1,373,717	709,736		100,896
Potatoes	26,787	37,188	31,568	1,628
Sugar	199,413	302,908	321,463	13,385
Cocoa	0	0	167	
Coffee	488	1,799	2,765	2
MATIF, Paris	37,129,032	28,056,573	26,002,003	558,247
MIBOR	455,778	17,304		10,655
3 Year Notional Bond	482,698	171,440		7,776
5 Year Notional Bond	52,342			100
Spanish Peseta/U.S. Dollar	4,343			0
Spanish Peseta/Deutschemark	10,620			0
MEFF RENTA FIJA, Spain	1,005,781	188,744		18,531
Livestock	18,220			3,506
Livestock Options	5,803			2,646
MERFOX, Argentina	24,023			6,152
CAC 40 Index (Short Term) Options	3,717,515	2,470,394		66,817
CAC 40 Index (Long Term) Options	86,881			57,731
MONEP, Paris	3,804,396	2,470,394		124,548
Canadian Government Bond Options	47,283	138,627	322,858	2,749
Bankers Acceptance Futures	194,071	88,105	27,920	21,874

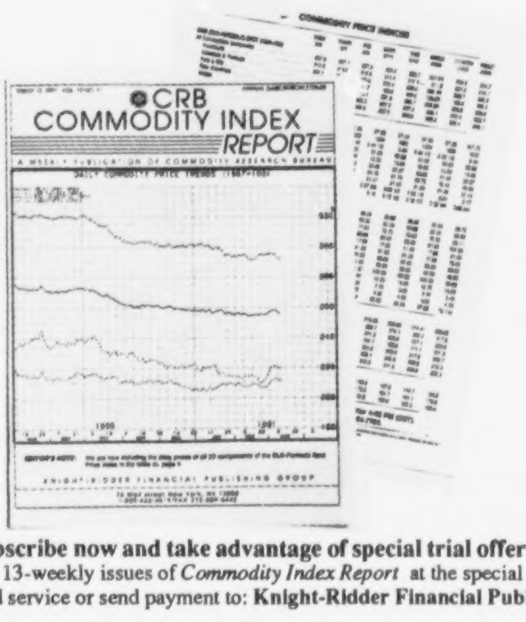
	1991	1990	1989	Year-End 1991 Open Interest
Canadian Government Bond Futures	421,493	454,058	86,530	3,713
Options on Canadian Government Bond Futures	15,439			150
Montreal Exchange	678,286	680,790	437,308	28,336
U.S. Dollar	2,382	3,848	4,561	0
5-Year Government Stock	267,152	308,229	348,632	9,013
5-Year Government Stock Options	21,654	9,464	26,802	1,782
10 Year Government Stock	296			0
90 Day Bank Bill	408,357	281,185	118,452	22,299
90 Day Bank Bill Options	29,727	3,002	2,435	4,392
Barclays Share Index	7,727	14,475	16,283	0
Barclays Share Index Options	309	1,652	2,868	0
New Zealand Dollar	2	597	2,178	0
New Zealand Dollar Options	0	2	36	0
New Zealand Wool	1,478			0
Forty Index Futures	3,040			20
Forty Index Options	153			1
3-Year Government Stock		985	825	
New Zealand Futures Exchange	742,277	622,454	523,072	37,507
Gold	4,440	16,210		4
Eurodollar	3,432,820	3,469,009	3,862,413	44,846
Deutschemark	59,675	64,269	83,653	314
Japanese Yen	47,169	116,421	286,782	131
British Pound	3,604	2,623	2,874	96
Nikkei Stock Average	721,751	880,513	858,965	9,267
High Sulfur Fuel Oil	182,957	213,918	993,295	4,680
Dubai Crude Oil	286	9,236		0
Gasoil	4,212			60
Euroyen	1,491,742	816,043	168,788	65,893
Euromark	32,724	57,188		620
Eurodollar Options	5,368	13,089	10,493	635
Euroyen Options	81,296	62,076		4,297
Deutschemark Options	0	0	1,337	0
Japanese Yen Options	0	15	2,327	0
SIMEX, Singapore	6,068,044	5,720,610	6,270,927	130,843
Swiss Market Index	590,851	30,509		8,049
ETOP	955			65
3 Month Euro Swiss Franc	121,854			4,263
5-Year Swiss Franc				5,489
Swiss Market Index Options	6,175,416	4,683,318	2,114,667	342,675
ETOP Options	23,956			5,115
SOFFEX, Switzerland	6,971,740	4,713,827	2,114,667	365,656
Interest Rate Options	91,823	18,545	1,512	2,476
Interest Rate Futures	3,950,083			
OMX (Index) Options	4,824,127	5,168,766	5,016,222	55,318
OMX (Index) Futures	3,675	3,675	0	
OMFX Currency Options		5,090	21,396	
OMFX Currency Futures		296	1,598	
GEMx Options	180,867			380
GEMx Futures	10,862			
Stockholm Options Exchange	9,061,437	5,190,986	5,040,728	58,174
All Ords. Index	388,174	313,761	325,846	13,384
90-Day Bank Bills	4,651,570	5,080,462	5,910,562	156,280
3-Year Treasury Bonds	2,111,589	1,607,748	966,666	32,535
10-Year Treasury Bonds	3,602,479	3,173,826	3,219,401	32,131
5-Yr Semi-Government Bond			1,773	
10-Yr Semi-Government Bond			4,908	

	1991	1990	1989	Year-End 1991 Open Interest
Australian Dollar		38	4,730	
Live Cattle (Cash set)	1,107	1,029	1,848	144
Wool (Cash set)	667	1	124	99
3-Year Treasury Bond Options	106,797	75,382	25,113	7,909
90-Day Bank Bill Options	719,482	605,641	515,119	94,642
10-Year Treasury Bond Options	669,623	511,555	708,970	30,575
All Ords. Index Options	247,982	185,991	139,834	47,736
Australian Dollar Options			7	
All Ords, SYCOM			3,757	
Bank Bill, SYCOM			65,505	
5-Yr Semi-Govt. Bond, SYCOM			15	
10-Yr Semi-Govt. Bond, SYCOM			1	
Aust 3-Yr T-Bond, SYCOM			33,753	
10-Yr Bond, SYCOM		80,868	2,344	
Sydney Futures Exchange	12,499,470	11,555,396	11,820,564	415,435
TSE 300 Spot Index	0	22	1,191	1,887
TSE 35 Index	60,950	52,687	34,814	7,661
TSE 35 Options	465,124	697,878	487,438	
Silver Options	1,276	956	5,325	267
Toronto Futures Exchange	527,350	751,543	528,768	9,815
Wheat	131,946	123,208	126,718	9,519
Oats	24,627	60,515	67,705	651
Thunder Bay Barley	106,561	169,768	244,961	5,685
Rye	23,364	31,638	33,983	1,112
Flax Seed	122,240	121,133	176,632	4,914
Canola (Rapeseed)	815,373	698,135	724,715	18,657
Western Barley	14,868	13,016	7,141	1,066
Winnipeg Commodity Exchange	1,238,979	1,217,413	1,381,855	41,604
Hang Seng Index	499,246	236,003	235,979	3,075
3-Month HIBOR	1,261	55,401		1
Soybeans	31,200	105,993	154,696	382
Sugar	34,237	109,145	143,989	784
Gold	992	992	1,172	
Hang Seng Comm. & Ind. Sub-Index	744			1
Hang Seng Properties Sub-Index	1,749			1
Hang Seng Finance Sub-Index	85			1
Hang Seng Utilities Sub-Index	43			1
Hong Kong Futures Exchange	569,557	507,534	535,836	4,246
Domestic Soybeans	24	24	24	
Red Beans	233,862	154,281	126,552	7,659
White Beans	24	24	24	
Potato Starch	24	24	24	
Imported Soybeans	405,642	322,448	293,888	22,636
* Hokkaido Grain Exchange	639,576	476,801	420,512	30,295
Red Beans	320,390	192,974	252,352	10,700
Imported Soybeans	323,659	379,339	488,198	15,300
Refined Sugar	1,437	1,437	1,454	
* Kanmon Commodity Exchange	645,486	573,750	742,004	26,000
Red Beans	279,216	90,061	161,558	8,598
Imported Soybeans	454,701	297,005	401,532	23,744
* KOBE Grain Exchange	733,917	387,066	563,090	32,342
Raw Silk	207,012	387,611	360,221	7,633

	1991	1990	1989	Year-End 1991 Open Interest
* KOBE Raw Silk Exchange	207,012	387,611	360,221	7,633
Rubber (RSS3)	1,374,337	1,383,394	1,145,536	35,647
* KOBE Rubber Exchange	1,374,337	1,383,394	1,145,536	35,647
Dried Cocoon	771,574	1,159,978	759,480	28,946
* Maebashi Dried Cocoon Exchange	771,574	1,159,978	759,480	28,946
Red Beans	726,200	577,313	443,618	28,768
Sweet Potato Starch	48	48	48	
Imported Soybeans	314,200	338,291	270,084	15,670
Refined Sugar	2,874	2,874	2,908	
* Nagoya Grain & Sugar Exchange	1,043,322	918,526	716,658	44,438
Cotton Yarn (40S)	1,082,950	1,209,007	1,170,132	26,860
Staple Fiber Yarn (Dull)	26,473	18,216	33,128	904
Wool Yarn	293,214	46,523	23,907	9,640
* Nagoya Textile Exchange	1,402,637	1,273,746	1,227,167	37,404
Red Beans	2,651,368	1,526,872	1,374,383	99,303
Imported Soybeans	1,472,375	1,824,590	1,554,358	61,345
* Osaka Grain Exchange	4,123,743	3,351,462	2,928,741	160,648
OSF 50	253	270	355	1
Nikkei Index Futures	21,643,085	13,588,779	5,442,647	159,807
Nikkei Index Options	11,835,611	9,187,741	6,610,435	96,650
* Osaka Securities Exchange	33,478,949	22,776,790	12,053,437	256,458
Refined Sugar	2,874	2,874	2,908	
Raw Sugar	1,426,146	2,837,839	1,939,101	106,939
* Osaka Sugar Exchange	1,429,020	2,840,713	1,942,009	106,939
Staple Fiber Yarn (Bright)	2,928	2,976	3,105	
Staple Fiber Yarn (Dull)	2,928	2,928	3,584	
Wool Yarn	563,941	391,134	263,185	20,989
Cotton Yarn (20S)	399,582	938,898	684,174	13,185
Cotton Yarn (40S)	444,400	390,343	426,729	11,447
* Osaka Textile Exchange	1,413,779	1,726,279	1,380,777	45,621
Gold	4,567,630	6,873,304	2,686,684	308,392
Silver	1,057,598	504,332	643,891	39,410
Platinum	5,403,596	3,269,222	3,024,272	357,311
Rubber	2,167,293	2,308,449	2,305,556	77,888
Cotton Yarn	1,607,228	1,865,880	3,351,422	41,445
Woolen Yarn	145,854	18,479	6,064	3,285
* Tokyo Commodity Exchange Industry	14,949,199	14,839,666	12,017,889	827,731
American Soybeans	3,460,473	4,401,165	3,964,110	223,685
Chinese Soybeans	3,211	3,906	4,723	5
Red Beans	6,338,319	2,739,687	1,326,191	243,976
American Soybean Options	15,619			2,739
* Tokyo Grain Exchange	9,817,622	7,144,758	5,295,024	470,405
3 Month Euroyen	14,665,521	14,413,693	4,495,076	252,786
3 Month Eurodollar	3,027	8,413	102,694	0
Japanese Yen	3,860	28,883	17,294	
U.S. Dollar-Japanese Yen	148,508			4,740

	1991	1990	1989	Year-End 1991 Open Interest
Euroyen Options	332,048			27,445
* Tokyo International Financial Futures Exch.	15,152,964	14,450,989	4,615,064	284,971
Yen Government Bond (10 Yr)	12,822,430	16,306,571	18,941,890	152,699
Yen Government Bond (10 Yr) Options	1,850,363	1,534,333	0	54,972
Yen Government Bond (20 Yr)	6,575	12,924	28,734	204
TOPIX Stock Index	1,676,798	3,091,014	3,727,512	25,679
TOPIX Options	120,280	267,032	0	20
U.S. T-Bond Futures	125,453	411,394	0	2,123
* Tokyo Stock Exchange	16,601,899	21,623,268	22,698,136	235,697
Refined Sugar	2,874	2,874	2,908	
Raw Sugar	2,351,512	6,375,354	4,765,137	243,616
* Tokyo Sugar Exchange	2,354,386	6,378,228	4,768,045	243,616
Dried Cocoon	836,629	1,328,122	926,402	25,315
* Toyahashi Dried Cocoon Exchange	836,629	1,328,122	926,402	25,315
Raw Silk	275,053	433,471	383,753	9,652
* Yokohama Raw Silk Exchange	275,053	433,471	383,753	9,652

*Exchange located in Japan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Conversion Factors

Commonly Used Agricultural Weights and Measurements

Bushel weights:
wheat and soybeans = 60 lbs.
corn, sorghum and rye = 56 lbs.
barley grain = 48 lbs.
barley malt = 34 lbs.
oats = 32 lbs.

Bushels to tonnes:
wheat and soybeans = bushels x 0.027216
barley grain = bushels x 0.021772
corn, sorghum and rye = bushels x 0.025400
oats = bushels x 0.014515

1 tonne (metric ton) equals:
2204.622 lbs.
1,000 kilograms
22.046 hundredweight
10 quintals
36.7437 bushels of wheat or soybeans
39.3679 bushels of corn, sorghum or rye
45.9296 bushels of barley grain
68.8944 bushels of oats
4.5929 cotton bales
(the statistical bale used by the USDA and ICAC contains a net weight of 480 pounds of lint)

Area measurements:
1 acre = 43,560 square feet = 0.040694 hectare
1 hectare = 2.4710 acres = 10,000 square meters
640 acres = 1 square mile = 259 hectares

Yields:
Wheat: bushels per acre x 0.6725 = quintals per hectare
Rye, corn: bushels per acre x 0.6277 = quintals per hectare
barley grain: bushels per acre x 0.5380 = quintals per hectare
oats: bushels per acre x 0.3587 = quintals per hectare

Commonly Used Weights

The troy, avoirdupois and apothecaries' grains are identical in U.S. and British weight systems, equal to 0.0648 gram in the metric system. One avoirdupois ounce equals 437.5 grains. The troy and apothecaries' ounces equal 480 grains, and their pounds contain 12 ounces.

Troy weights and conversions:
24 grains = 1 pennyweight
20 pennyweights = 1 ounce
12 ounces = 1 lb.
1 troy ounce = 31.103 grams
1 troy ounce = 0.0311033 kilogram
1 troy pound = 0.37224 kilogram
1 kilogram = 32.1507 troy ounces
1 tonne = 32,151 troy ounces

Avoirdupois weights and conversions:
27 11/32 grains = 1 dram
16 drams = 1 ounce
16 ounces = 1 lb.
1 lb. = 7,000 grains
14 lbs. = 1 stone (British)
100 lbs. = 1 hundredweight (U.S.)
112 lbs. = 8 stone = 1 hundredweight (British)
2,000 lbs. = 1 short ton (U.S. ton)
2,240 lbs. = 1 long ton (British ton)
160 stone = 1 long ton
20 hundredweight = 1 ton
1 lb. = 0.4536 kilogram
1 hundredweight (cwt.) = 45.359 kilograms
1 short ton = 907.18 kilograms
1 long ton = 1,016.05 kilograms

Metric weights and conversions:
1,000 grams = 1 kilogram
100 kilograms = 1 quintal
1 tonne = 1,000 kilograms = 10 quintals
1 kilogram = 2.240622 lbs.
1 quintal = 220.462 lbs.
1 tonne = 2204.6 lbs.
1 tonne = 1.102 short tons
1 tonne = 0.9842 long ton

U.S. dry volumes and conversions:
1 pint = 33.60 cubic inches = 0.5506 liter
2 pints = 1 quart = 1.1012 liters
8 quarts = 1 peck = 8.8098 liters
4 pecks = 1 bushel = 35.2391 liters
1 cubic foot = 28.3169 liters

U.S. liquid volumes and conversions:
1 ounce = 1.8047 cubic inches = 29.6 milliliters
1 cup = 8 ounces = 0.24 liter = 237 milliliters
1 pint = 16 ounces = 0.48 liter = 473 milliliters
1 quart = 2 pints = 0.946 liter = 946 milliliters
1 gallon = 4 quarts = 231 cubic inches = 3.785 liters
1 liter = 1.0567 quarts = 1,000 milliliters
(1 milliliter = 0.033815 fluid ounce)
1 liter = 33.814 fluid ounces
1 imperial gallon = 277.42 cubic inches = 1.2 U.S. gallons = 4.546 liters

Energy Conversion Factors

U.S. Crude oil (average gravity):
1 U.S. barrel = 42 U.S. gallons
1 short ton = 6.65 barrels
1 tonne = 7.33 barrels

Barrels per tonne for various origins:

Abu Dhabi	7.624
Algeria	7.661
Angola	7.206
Australia	7.775
Bahrain	7.335
Brunei	7.334
Canada	7.428
Dubai	7.295
Ecuador	7.580
Gabon	7.245
Indonesia	7.348
Iran	7.370
Iraq	7.453
Kuwait	7.261
Libya	7.615
Mexico	7.104
Neutral Zone	6.825
Nigeria	7.410
Norway	7.444
Oman	7.390
Qatar	7.573
Romania	7.453
Saudi Arabia	7.338
Trinidad	6.989
Tunisia	7.709
United Arab Emirates	7.522
United Kingdom	7.279
United States	7.418
USSR	7.350
Venezuela	7.005
Zaire	7.206

Refined Products
The number of barrels contained in a tonne of each of the following products is:

Aviation gasoline	8.90
motor gasoline	8.50
kerosene	7.75
jet fuel	8.00
distillate, including diesel	7.46
residual fuel oil	6.45
lubricating oil	7.00
grease	6.30
white spirits	8.50
paraffin oil	7.14
paraffin wax	7.87
petrolatum	7.87
asphalt and road oil	6.06
petroleum coke	5.50
bitumen	6.06
LPG	11.60

(cont. above)

Approximate Heat Content of Petroleum Products (Million Btu per barrel, 1 British thermal unit is the amount of heat required to raise the temperature of 1 pound of water 1 degree F.)

Petroleum Product	**Heat Content**
Asphalt	6.636
Aviation Gasoline	5.048
Butane	4.326
Distillate Fuel Oil	5.825
Ethane	3.082
Isobutane	3.974
Jet Fuel, Kerosene	5.670
Jet fuel, Naptha	5.355
Kerosene	5.670
Lubricants	6.065
Motor Gasoline	5.253
Natural Gasoline	4.620
Pentanes Plus	4.620
Petrochemical Feedstocks:	
Naptha less than 401°F	5.248
Other Oils equal to or greater than 401°F	5.825
Still Gas	6.000
Petroleum Coke	6.024
Plant Condensate	5.418
Propane	3.836
Residual Fuel Oil	6.287
Special Napthas	5.248
Unfinished Oils	5.825
Unfractionated Stream	5.418
Waxes	5.537

Source: U.S. Department of Energy

Natural Gas Conversions
Although there are approximately 1,031 Btu in a cubic foot of gas, for most applications the following conversions are sufficient:

Cubic Feet					**MMBtu**
1,000	(one thousand cubic feet)	=	1 Mcf	=	1
1,000,000	(one million cubic feet)	=	1 MMcf	=	1,000
10,000,000	(ten million cubic feet)	=	10 MMcf	=	10,000
1,000,000,000	(one billion cubic feet)	=	1 Bcf	=	1,000,000
1,000,000,000,000	(one trillion cubic feet)	=	1 Tcf	=	1,000,000,000

Alcohol

Salient Statistics of Alcohol in the United States In Millions of Gallons[3]

Year	Ethyl Alcohol & Spirits		Denatured Alcohol[2]				Production of Methanol (Synthetic) (ths. tonnes)
				Consumption			
	Production[4]	Stocks Dec. 31	Production	Total	For Fuel Use	Stocks Dec. 31	
1978	506.7	71.2	227.7	228.8	—	2.7	2,922
1979	570.3	53.6	260.7	260.9	—	4.1	3,341
1980	643.2	72.0	301.2	281.5	14.5	10.1	3,244
1981	571.2	83.3	230.7	227.1	5.7	5.4	3,890
1982	601.1	95.0	284.9	277.9	41.9	6.6	3,426
1983	698.5	78.6	354.4	356.7	65.8	6.6	3,620
1984	631.3	150.6	416.9	410.5	116.7	24.5	3,712
1985	681.0	46.9	512.2	513.8	222.9	26.5	2,269
1986	645.4	47.7	408.6	444.6	226.7	23.8	3,268
1987	730.3	43.4	442.5	460.8	208.3	9.7	3,418
1988	777.6	39.7	463.7	469.9	216.0	9.2	3,693
1989	960.1	54.3	514.3	502.2	200.5	24.5	3,705
1990[1]	1,107.3	36.8	594.9	645.7	297.9	17.2	3,622

[1] Preliminary. [2] At denaturing plants. [3] Ethyl alcohol in proof gallons; denatured alcohol in wine gallons. [4] Represents alcohol and spirits of 190° of proof and over. *Source: Alcohol and Tobacco Division* T.1

U.S. Production of Ethyl Alcohol[1] & Spirits In Millions of Tax Gallons[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1978	35.8	41.1	50.4	42.2	31.3	48.7	42.5	45.4	50.5	40.3	38.0	40.7	506.7
1979	42.8	41.3	49.3	47.3	42.9	48.2	43.8	46.0	53.7	49.4	51.0	54.6	570.3
1980	57.4	52.7	55.3	55.2	54.2	45.7	52.8	46.4	57.3	64.6	47.9	53.7	643.2
1981	49.2	44.3	49.3	51.0	44.0	42.2	45.1	55.8	53.1	44.0	47.8	45.4	571.2
1982	42.9	39.8	48.2	37.6	41.9	52.6	51.9	44.3	53.3	61.9	61.7	65.0	601.1
1983	60.9	58.6	59.4	46.1	56.6	60.2	63.8	56.9	59.2	55.6	53.9	47.2	698.5
1984	49.3	45.9	54.1	58.2	50.9	49.7	48.4	48.4	51.8	60.5	50.4	63.7	631.3
1985	63.3	44.8	60.6	55.6	56.3	63.7	58.5	55.5	59.4	64.1	51.8	47.1	681.0
1986	45.6	51.5	56.5	52.4	55.8	50.1	48.9	50.5	56.7	62.3	54.2	60.8	645.4
1987	62.2	54.9	55.8	60.2	62.0	57.4	60.1	63.4	63.8	63.0	60.6	66.9	730.3
1988	62.5	61.3	64.2	60.9	69.8	61.3	66.0	62.8	61.2	69.7	69.7	67.8	777.6
1989[3]	82.2	69.8	68.9	68.6	79.3	76.1	77.6	81.0	89.0	92.0	88.8	86.8	960.1
1990[3]	87.4	78.9	89.5	88.8	90.4	78.6	94.1	94.3	100.4				

[1] At industrial alcohol plants. [2] A "tax gallon" is the alcoholic equivalent of a U.S. gallon at 60 degrees Fahrenheit, containing 50% of ethyl alcohol by volume. [3] Preliminary. *Source: Bureau of Alcohol, etc.* T.3

U.S. Stocks of Ethyl Alcohol & Spirits In Millions of Tax Gallons

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1985	150.6	148.4	128.9	126.5	130.7	115.9	99.4	94.5	61.0	53.2	47.4	48.0
1986	46.9	41.4	41.1	45.7	46.4	44.5	45.4	44.1	39.8	35.8	47.6	45.7
1987	47.7	49.0	51.5	41.3	45.5	48.9	44.7	46.9	44.0	38.6	34.3	41.7
1988	43.4	48.3	45.9	36.4	39.5	34.7	31.3	44.0	38.6	28.4	35.9	36.3
1989[1]	39.7	45.0	48.1	46.2	43.4	45.7	39.7	44.9	40.5	42.5	42.5	49.5
1990[1]	54.3	50.9	39.5	39.9	42.5	44.1	42.5	50.1	41.3	37.3		

[1] Preliminary. *Source: Bureau of Alcohol, etc.*

U.S. Consumption (Withdrawals) of Denatured In Millions of Wine Gallons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	40.0	31.8	42.9	53.3	52.2	43.3	40.7	44.5	36.5	46.6	40.0	41.9	513.8
1986	45.1	33.0	37.3	38.9	40.6	33.5	36.1	35.6	37.4	35.0	38.1	34.1	444.6
1987	34.9	33.6	44.8	38.7	37.4	41.8	37.2	40.9	41.4	39.4	30.3	40.3	460.8
1988	34.8	35.7	45.8	40.8	41.6	42.2	35.7	38.6	38.7	38.5	36.9	39.7	469.9
1989[1]	37.8	38.0	42.1	36.3	45.8	45.6	39.9	40.9	41.3	41.4	51.7	41.4	502.2
1990[1]	65.5	62.7	58.3	54.9	52.2	55.4	48.6	52.9	52.3				

[1] Preliminary. *Source: Bureau of Alcohol, etc.* T.2

Aluminum

Aluminum suffered a kick in the can during 1991, as a recessionary environment in the West met up with the need for hard currency in the Eastern Bloc, and prices tumbled dramatically. Starting the year at around 70 cents a pound, prices steadily declined throughout 1991, finishing the year at around 55 cents a pound, the lowest in five years.

During the first six months of 1991, Soviet exports to the West, much of which ended up in the LME's Rotterdam warehouse, were estimated at 261,000 tonnes by the World Bureau of Metal Statistics. This was almost as much as all of 1990's 274,000 tonnes, and many observers believed that, given the collapse of the USSR as a political entity, the glut was likely to continue into 1992 and beyond.

It was a point of debate as to whether the increases in Soviet exports were the result of Russian overproduction or stock sales to generate hard currency. However, the numbers continued to grow into the second half of 1991. For the first six months of the year, Soviet exports averaged about 50,000 tonnes a month and were reportedly up to around 80,000 tonnes monthly in the last half of 1991.

In the West, aluminum producers were slow to respond to a changing market and delayed meaningful production cutbacks until late summer. Analysts indicated that 1991 would run a surplus of more than 800,000 tonnes. LME stocks continued to rise during the year, reflecting this production surplus, and by year's end were over 700,000 tonnes, with widespread expectations that they would reach more than 1 million tonnes in 1992.

For the first nine months of 1991, U.S. primary production of aluminum was 3.09 million tonnes, compared with 1990's full-year total of 4.08 million. Imports for consumption for the first seven months of 1991 were 850,000 tonnes, against 1990's full-year total of 1.3 million tonnes. Primary aluminum production in 1991 was greater than in each corresponding month in 1990. Given the recessionary climate and the large stock buildup, most observers felt that the aluminum price outlook was for continued weakness in 1992.

Recycling is a major factor in the domestic aluminum industry. Prior to 1985, primary aluminum production accounted for more than two-thirds of total U.S. supply, or about 5 million tonnes a year. Currently, domestic primary aluminum usage is about 4 million tonnes, and the level is decreasing annually. In 1985, there were 32 domestic aluminum smelters; today there are 23.

Futures Markets

Aluminum futures are traded on the London Metal Exchange (LME) and on the New York Commodity Exchange (COMEX).

World Production of Primary Aluminum In Thousands of Metric Tons

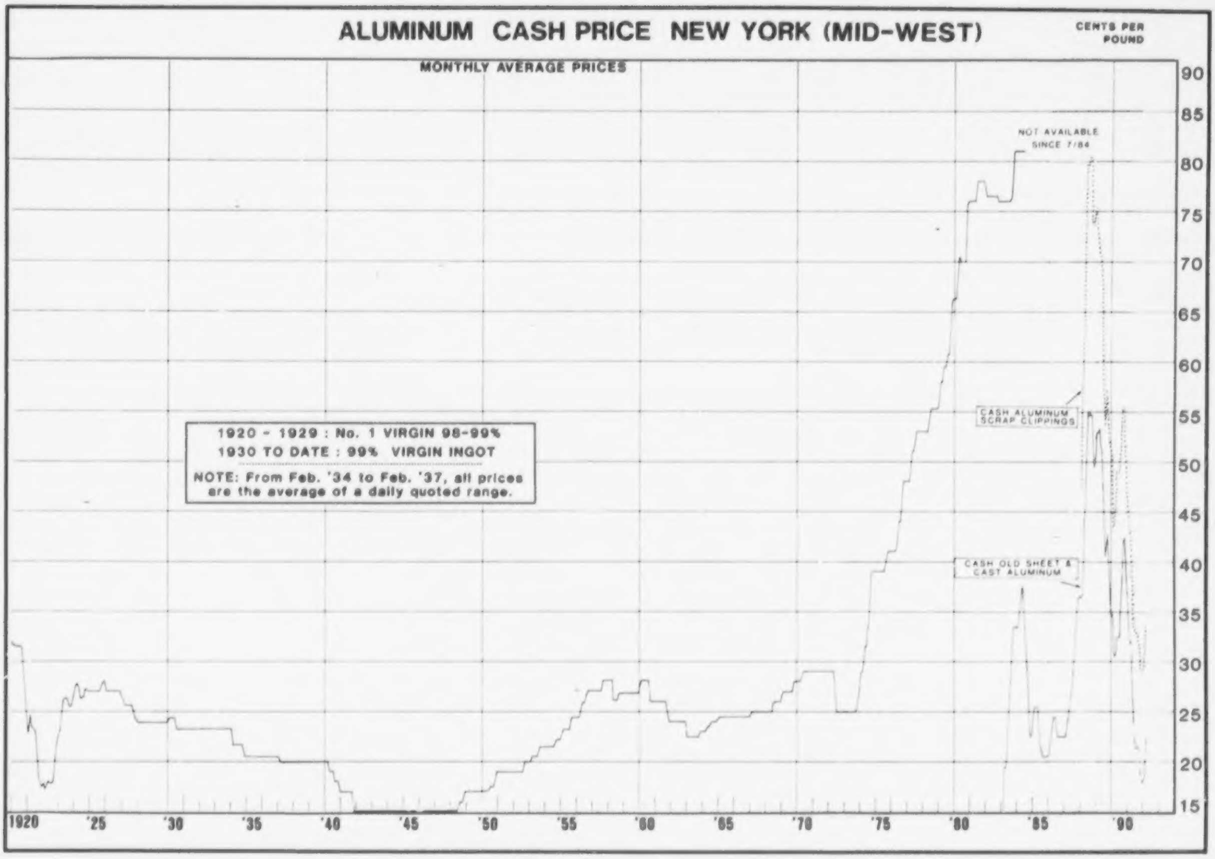
Year	Australia	Austria	Brazil	Canada	China	France	Germany	Italy	Japan	Norway	Spain	Switzerland	United Kingdom	United States	USSR	Venezuela	World Total
1983	478	94	401	1,091	400	361	743	196	256	713	358	76	253	3,353	2,000	335	13,904
1984	758	96	455	1,227	400	342	777	230	287	765	381	79	288	4,099	2,100	386	15,714
1985	851	94	549	1,282	410	293	745	224	227	743	370	73	275	3,500	2,200	396	15,398
1986	882	93	757	1,355	410	322	765	243	140	726	350	80	276	3,037	2,300	424	15,413
1987	1,004	93	843	1,540	615	323	738	233	41	806	341	73	294	3,343	2,400	440	16,385
1988	1,150	95	874	1,535	800	328	744	222	35	864	323	72	300	3,944	2,400	455	17,608
1989[1]	1,177	93	869	1,555	825	335	742	220	35	859	352	71	297	4,016	2,400	500	17,980
1990[2]	1,234	89	931	1,570	850	326	720	232	34	845	355	72	290	4,048	2,200	546	17,817
1991[2]	1,200		1,100	1,800	900	340				840				4,100	2,300	600	18,500

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines* T.4

U.S. Production of Primary Aluminum (Domestic & Foreign Ores) In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total[1]
1983	253	223	248	245	265	261	284	297	299	320	318	340	3,353
1984	342	324	350	348	365	351	349	344	329	338	325	334	4,099
1985	329	289	312	295	304	288	292	289	280	285	265	271	3,499
1986	273	251	281	275	284	241	231	235	231	243	239	252	3,036
1987	262	238	266	263	275	272	282	286	286	301	301	316	3,343
1988	320	304	330	324	336	323	334	333	327	339	332	344	3,944
1989	346	312	347	334	347	335	346	341	323	328	328	343	4,030
1990	345	311	345	331	342	330	340	341	332	347	337	347	4,048
1991[2]	349	317	352	340	353	343	354	350	336	347			

[1] Final annual totals. [2] Preliminary. *Source: Bureau of Mines* T.9



ALUMINUM CASH PRICE NEW YORK (MID-WEST)

Salient Statistics of Aluminum in the U.S. In Thousands of Metric Tons

Year	Net Import Reliance as a % of Apparent Consumption	Production: Primary	Production: Secondary	Primary Shipments[1]	Recovery from Scrap: Old	Recovery from Scrap: New	Apparent Consumption	Wrought Pots: Plate, Sheet, Foil	Wrought Pots: Rolled Structural Shapes[2]	Wrought Pots: Extruded Shapes[3]	Net Shipments[5] by Producers: All	Castings: Permanent Mold	Castings: Die	Castings: Sand	Castings: All	Total All Net Shipments
1985	16	3,500	1,762	6,382	850	912	5,174	3,291	357	1,267	5,031	168	698	93	1,011	6,042
1986	26	3,037	1,773	6,545	784	989	5,143	3,397	337	1,335	5,179	155	749	77	1,032	6,211
1987	23	3,343	1,986	6,813	852	1,134	5,469	3,740	346	1,351	5,549	181	685	113	1,012	6,562
1988	7	3,944	2,122	6,851	1,045	1,077	5,373	3,780	334	1,337	5,567	201	700	115	1,055	6,621
1989[4]	[7]	4,030	2,054	6,761	1,011	1,043	4,959	3,899	339	1,280	5,633				1,096	6,728
1990[6]	[7]	4,048	2,393	6,498	1,359	1,034	5,263									
1991[1]	[7]	4,100	1,300				5,000									

[1] To Domestic Industry. [2] Also rod, bar & wire. [3] Also rod, bar, tube, blooms & tubing. [4] Preliminary. [5] Consists of total shipments less shipments to other mills for further fabrication. [6] Estimate. [7] Net exports. *Source: U.S. Bureau of Mines* T.8

U.S. Supply and Distribution of Aluminum In Thousands of Metric Tons

Year	Apparent Consumption	Production: Primary	Production: From Old Scrap	Imports	Exports	Inventories (Dec. 31): Private	Inventories (Dec. 31): Government	Year	Apparent Consumption	Production: Primary	Production: From Old Scrap	Imports	Exports	Inventories (Dec. 31): Private	Inventories (Dec. 31): Government
1984	5,279	4,099	825	1,477	734	2,653	2	1988	5,373	3,944	1,045	1,620	1,247	1,883	2
1985	5,174	3,500	850	1,420	908	2,343	2	1989	4,959	4,030	1,011	1,470	1,613	1,822	2
1986	5,143	3,037	784	1,967	753	2,235	2	1990[1]	5,263	4,048	1,359	1,514	1,655	1,825	2
1987	5,469	3,343	852	1,850	917	2,000	2	1991[2]	4,875	4,130	1,333	1,280	1,355	1,850	3

[1] Preliminary [2] Estimate *Source: U.S. Bureau of Mines* T.8A

ALUMINUM

U.S. Aluminum Products Distribution of End-Use Shipments In Thousands of Tonnes

Year	Building & Construction	Consumer Durables	Containers & Packaging	Electrical	Exports	Machinery & Equip.	Transportation	Other	Total
1983	1,302	478	1,777	589	563	353	1,062	261	6,420
1984	1,300	502	1,828	681	488	377	1,375	279	7,040
1985	1,375	484	1,862	642	546	377	1,383	264	6,928
1986	1,432	540	1,926	626	413	383	1,372	252	6,958
1987	1,441	576	2,052	620	569	401	1,500	223	7,382
1988	1,316	588	2,036	671	787	435	1,536	269	7,638
1989	1,294	544	2,112	663	1,060	436	1,448	264	7,821
1990[1]	1,208	504	2,168	590	1,130	444	1,323	260	7,628

[1] Preliminary. *Source: Bureau of Mines*

Average Annual Primary Aluminum Prices (Dollars per Pound)

Year	Average annual price	Based on constant 1987 dollars	Year	Average annual price	Based on constant 1987 dollars
1909	.220	3.144	1951	.190	.891
1910	.223	3.140	1952	.194	.894
1911	.201	2.830	1953	.209	.951
1912	.220	2.972	1954	.218	.977
1913	.236	3.233	1955	.237	1.026
1914	.186	2.479	1956	.240	1.003
1915	.340	4.359	1957	[5].254	1.029
1916	.607	6.896	1958	.248	.985
1917	.516	4.825	1959	.247	.958
1918	.335	2.915	1960	.260	.988
1919	.321	2.359	1961	.255	.961
1920	[1].327	2.031	1962	.239	.882
1921	.221	1.673	1963	.226	.823
1922	[2].187	1.533	1964	.237	.846
1923	.254	1.999	1965	.245	.853
1924	.270	2.160	1966	.245	.826
1925	.272	2.141	1967	.250	.820
1926	.270	2.144	1968	.256	.801
1927	.254	2.065	1969	.272	.805
1928	.243	1.959	1970	.287	.804
1929	[3].243	1.959	1971	.290	.769
1930	.238	1.966	1972	.250	.633
1931	.233	2.118	1973	[6].264	.628
1932	.233	2.377	1974	.431	.940
1933	.233	2.453	1975	.348	.689
1934	.234	2.251	1976	.412	.770
1935	.200	1.886	1977	.478	.837
1936	[4].205	1.933	1978	.510	.831
1937	.199	1.793	1979	.707	1.061
1938	.200	1.818	1980	.761	1.043
1939	.200	1.852	1981	.598	.748
1940	.187	1.700	1982	.468	.552
1941	.165	1.411	1983	.683	.772
1942	.150	1.200	1984	.611	.666
1943	.150	1.172	1985	.488	.517
1944	.150	1.154	1986	.559	.576
1945	.150	1.128	1987	.723	.723
1946	.150	.909	1988	1.101	1.068
1947	.150	.798	1989	.878	.816
1948	.157	.782	1990	.740	.661
1949	.170	.850	1991	.954	
1950	.177	.873			

[1] 98%- to 99%-pure aluminum. [2] 98%-pure aluminum metal. [3] 99%-pure aluminum metal. [4] 99% plus-pure virgin ingot aluminum [5] 99.5%-pure unalloyed aluminum ingot. [6] U.S. market spot price. *Sources: American Bureau of Metal Statistics, Engineering & Mining Journal, and Metals Week.*

Average Price of Cast Aluminum Scrap (Crank Cases) in Chicago Area[1] In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	34.83	35.50	36.59	37.50	35.64	32.98	30.50	29.11	25.55	23.07	22.50	23.67	30.62
1985	25.50	25.50	25.50	25.50	23.23	21.50	21.40	20.50	20.50	20.50	20.50	22.55	22.55
1986[1]	24.36	26.61	29.64	30.91	25.40	22.62	23.00	24.67	26.62	24.93	24.05	23.55	25.53
1987	25.75	27.56	30.00	31.64	33.10	34.82	36.20	40.24	41.55	43.68	41.87	42.82	35.77
1988	45.50	47.40	52.67	55.64	53.93	55.00	54.65	54.85	54.69	50.64	49.50	50.50	52.08
1989	53.02	52.97	53.41	51.90	51.14	47.59	42.97	40.63	43.30	40.14	37.75	35.65	45.87
1990	34.68	30.50	30.77	32.50	32.50	32.50	35.93	37.50	41.97	42.50	40.58	39.00	35.91
1991	33.50	32.00	32.00	30.64	28.45	22.40	21.50	21.50	21.13	19.00	18.11	18.00	24.85

[1] Dealer buying prices—prior to 1986 prices are for the N.Y. area. *Source: American Metal Market* T.12

Aluminum Products (Ingot & Mill Products) Shipments[1] in the U.S. In Million Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	1,107	1,268	1,388	1,133	1,301	1,293	1,115	1,244	1,139	1,304	1,153	1,210	14,655
1985	1,166	1,137	1,291	1,228	1,304	1,208	1,199	1,228	1,264	1,278	1,123	1,032	14,456
1986	1,187	1,176	1,401	1,340	1,390	1,202	1,115	1,132	1,117	1,218	1,045	1,064	14,386
1987	1,170	1,241	1,329	1,284	1,306	1,433	1,346	1,261	1,334	1,307	1,219	1,353	15,584
1988	1,186	1,199	1,402	1,246	1,331	1,416	1,214	1,357	1,334	1,293	1,322	1,155	15,453
1989	1,266	1,232	1,419	1,246	1,306	1,365	1,205	1,369	1,299	1,278	1,169	1,071	15,468
1990	1,234	1,154	1,313	1,224	1,355	1,318	1,257	1,272	1,224	1,247	1,098	1,120	14,757
1991[2]	1,179	1,086	1,221	1,211	1,295	1,271	1,376	1,357	1,263	1,311			

[1] Mill products & pig & ingot (net shipments). [2] Preliminary. *Source: Bureau of the Census* T.10

U.S. Aluminum Inventories, Total (Ingot, Mill Prod. & Scrap) In Million Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1984	4,994	5,200	5,225	5,295	5,435	5,579	5,618	5,775	5,794	5,881	5,889	5,922
1985	5,850	5,900	5,824	5,796	5,749	5,712	5,595	5,579	5,512	5,439	5,324	5,241
1986	5,165	5,165	5,158	5,053	5,097	5,044	5,044	5,083	5,057	4,977	4,927	4,902
1987	4,928	4,896	4,772	4,696	4,584	4,515	4,474	4,393	4,303	4,152	4,211	4,245
1988	4,175	4,272	4,363	4,343	4,941	4,344	4,215	4,235	4,175	4,175	4,134	4,119
1989	4,151	4,189	4,163	4,160	4,246	4,224	4,289	4,373	4,253	4,158	4,064	3,991
1990	4,016	4,019	4,035	3,914	3,974	3,808	3,916	4,070	3,980	4,040	4,119	4,028
1991[1]	4,013	4,068	4,169	4,256	4,212	4,135	4,046	3,988	3,942			

[1] Preliminary. *Source: Bureau of Mines* T.5

Aluminum Exports (Metal & Alloys, Crude) from the U.S. In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	24.5	20.1	19.9	7.6	23.4	24.0	22.1	37.5	23.9	17.9	32.9	32.3	286.2
1985	40.6	31.9	22.7	28.1	29.8	53.9	37.9	25.9	26.9	19.4	18.6	11.9	347.5
1986	21.8	25.5	18.1	12.8	17.0	11.4	11.0	15.6	16.3	19.2	17.3	21.3	207.4
1987	15.4	23.9	21.3	23.6	15.2	14.6	26.3	27.8	27.9	20.6	29.1	35.5	281.1
1988	18.4	13.7	19.8	20.9	34.5	43.4	41.6	44.3	39.0	25.7	47.5	51.3	400.1
1989	34.8	41.8	40.2	33.3	34.1	44.6	46.2	52.0	46.1	68.8	72.7	80.0	593.0
1990	79.0	65.1	55.3	61.4	41.4	48.6	41.5	39.0	53.6	59.6	62.2	76.0	679.8
1991[1]	61.1	54.8	46.7	82.8	56.4	71.3	69.0	80.1	54.6				

[1] Preliminary. *Source: Bureau of the Census* T.7

Aluminum General Imports (Metal & Alloys, Crude) into the U.S. In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	70.9	94.9	114.3	68.8	108.8	73.9	66.8	68.0	89.9	93.0	68.6	57.4	975.3
1985	68.6	56.9	80.6	66.4	72.9	76.9	68.9	72.9	93.8	86.2	69.6	58.1	871.7
1986	82.1	100.6	127.8	131.0	151.8	124.3	119.0	123.5	96.3	107.3	91.1	77.3	1,332.1
1987	114.3	113.0	100.8	96.4	104.2	121.2	109.4	96.3	95.5	112.7	94.0	92.2	1,250.6
1988	101.2	92.0	104.9	89.0	92.1	80.6	79.6	80.0	92.4	81.9	82.0	55.0	1,030.6
1989	99.4	78.6	83.3	92.4	75.5	73.9	71.8	91.9	83.6	65.2	53.9	54.2	923.0
1990	84.4	73.4	85.4	85.1	90.4	94.0	102.6	82.1	76.4	66.8	58.7	60.6	959.6
1991[1]	79.5	79.4	84.3	88.2	85.1	75.9	97.3	89.0	86.6				

[1] Preliminary. *Source: Bureau of the Census* T.6

Antimony

Most primary antimony is a byproduct of mining, smelting, or refining of other metals and ores that contain relatively small amounts of antimony. U.S. output, mainly from lead or silver-copper ores, is negligible. In 1991, U.S. primary antimony and oxide production totaled 18,500 tonnes, while secondary production (largely from recycling lead-antimony batteries) was 18,000 tonnes. U.S. imports for consumption fell to 29,000 tonnes from 29,403 in 1990. Exports declined to 7,000 tonnes from 7,727. Apparent consumption rose to 39,700 tonnes from 38,963.

World mine production fell to 59,400 tonnes from 60,400 in 1990. Bolivia and China remained the largest producers, but their joint attempt to control prices collapsed in May 1990, when Bolivia pulled out of the deal. Chinese sales then flooded the world market, resulting in a sharp decline in dealer prices.

In April, U.S. antimony producers and manufacturers of antimony trioxide-based products filed an antidumping petition with the International Trade Commission. The ITC ruled in June that the U.S. antimony trioxide refining industry was being hurt by Chinese imports. In October, a dumping margin of 3.18 percent was imposed. In February 1992, the ITC ruled that antimony trioxide was being sold at less than fair value, by margins of from 13 percent to 81 percent. Chinese exporters then had to post bonds or cash equal to the dumping margin, pending a decision to impose duties.

Antimony compounds are chiefly used as flame retardants in textiles and plastics. Batteries, ceramics, chemicals and glass are other uses.

World Mine Production of Antimony (Content of Ore) In Metric Tons

Year	Australia	Austria	Bolivia	Canada	China[1]	Czechoslovakia	Guatemala	Mexico[2]	Morocco	Peru[4]	South Africa	Turkey	Thailand	USSR	Yugoslavia	World Total[1]
1988	1,320	228	9,943	3,171	30,000	2,921	921	2,185	250	420	6,240	1,877	445	9,600	725	70,547
1989	1,360	350	8,533	2,818	30,000	600	1,343	1,906	142	519	6,167	1,350	495	9,600	798	66,283
1990[3]	1,300	350	8,300	653	30,000	500	1,200	1,800	140	500	6,000	1,100	500	9,000	400	62,004
1991[1]			8,163					2,614			4,600					60,400

[1] Estimate. [2] Includes antimony content of miscellaneous smelter products. [3] Preliminary. [4] Recoverable. *Source: Bureau of Mines* T.13

Salient Statistics of Antimony in the United States In Metric Tons

Year	Net Import Reliance as a % of Apparent Consumption	Production			Imports[4]			Exports (Oxide)	Industry Stocks, Dec. 31[2]					
		Primary[2]			Ore									
		Mine	Smelter	Secondary (Alloys)[2]	Gross Weight	Sb Content	Oxide Gross Weight		Ores & Concentrates	Metallic	Oxide	Sulfide	Residues & Slag	Total[5]
1988	65	N.A.	17,616	16,172		3,728	8,044	1,227	N.A.	2,360	3,840	24	274	6,498
1989	56	N.A.	18,954	19,501	8,613	4,550	8,613	1,850	N.A.	1,873	4,079	16	302	6,270
1990[1]	51	N.A.	19,717	20,380	5,680	3,454	12,041	7,139	N.A.	2,936	4,388	17	844	8,185
1991[3]	57		18,500	18,000										7,500

[1] Preliminary [2] Antimony content. [3] Estimate. [4] Imports for consumption. [5] Including primary antimony residues & slag. *Source: Bureau of Mines* T.15

Industrial Consumption of Primary Antimony in the United States In Metric Tons (Antimony Content)

Year	Metal Products							Flame Retardents		Non-Metal Products					Grand Total
	Ammunition	Antimonial Lead	Sheet & Pipe	Bearing Metal & Bearings	Solder	Type Metal	Total All Metal Products	Plastics	Total	Ceramics & Glass	Rubber Pdt's.	Pigments	Plastics	Total	
1987	N.A.	1,102	76	187	347	8	2,312	4,139	5,677	1,122	N.A.	279	750	2,384	10,373
1988	N.A.	1,538	181	178	256	6	2,781	5,469	6,756	1,221	29	179	916	2,530	12,067
1989	521	1,871	157	129	245	4	3,015	5,842	7,741	1,050	97	196	1,141	2,668	13,424
1990[1]	602	1,995		90	208	3	3,133	5,668	7,017	991	27	246	1,148	2,589	12,739

[1] Preliminary. [2] Estimated coverage based on 77% of the industry. *Source: Bureau of Mines* T.16

Antimony Imported (for Consumption) into the U.S. and Price Ranges

Year	Imported for Consumption							Foreign Metal (Duty Paid Delivery N.Y.)	Antimony Trioxide	Metal[2]	Domestic (Based on Antimony in Alloy)
	Antimony Ore	Needle or Liquated Antimony		Antimony Metal		Antimony Oxide		¢ Lb.			
	Value Ths. $	Gross Wt. Tonnes	Value $ Ths.	Tonnes	Value $ Ths.	Tonnes	Value $ Ths.				
1987	5,634	93	112	8,801	18,171	10,274	20,024	105–116	125–135	110.6	200
1988	5,543	109	432	16,604	34,837	9,586	20,164	101–116	135–143	103.9	200
1989	8,462			10,621	21,143	9,994	19,770	84–103	143	94.3	200
1990[1]	4,835			13,940	23,380	12,009	19,574	78–88	110–120	81.8	
1991[1]										82.0	

[1] Preliminary. [2] N.Y. Dealer Price, 99.5% to 99.6%, C.I.F. U.S. ports. *Source: Bureau of Mines* T.17

Apples

World Production[2] of Apples, Fresh (Dessert & Cooking) In Thousands of Metric Tons

Crop Year	Argentina	Australia	Canada	France	Hungary	Italy	Japan	Mexico	Netherlands	South Africa	Spain	Turkey	United States[2]	West Germany	Yugoslavia	World Total
1977	820	301	411	1,186		1,828	959	297	315	289	672		3,057	1,176	381	13,934
1978	810	258	452	1,768		1,874	844	313	510	367	1,015		3,446	1,783	381	16,589
1979	972	345	435	1,769		2,023	853	338	450	372	1,097		3,694	1,951	428	16,605
1980	908	345	553	1,802		1,966	960	282	450	450	859		4,005	1,880	483	17,179
1981	804	294	422	1,502	1,156	1,774	846	280	325	486	1,008	1,450	3,517	884	508	17,006
1982	817	301	478	1,978	1,278	2,642	924	394	490	519	860	1,600	3,684	2,637	746	21,626
1983	872	267	485	1,575	1,141	2,057	1,048	302	403	513	1,012	1,750	3,800	1,313	557	19,205
1984	922	352	434	2,005	1,088	2,241	812	486	431	557	970	1,900	3,776	1,799	584	20,701
1985	594	288	479	1,793	954	2,012	910	443	300	517	988	1,900	3,590	1,410	368	18,775
1986	1,078	362	388	1,867	1,253	2,020	986	629	445	470	829	1,860	3,565	2,180	637	21,098
1987	925	309	506	1,985	1,064	2,273	998	615	340	526	971	1,680	4,873	1,077	423	20,922
1988–9	1030	350	501	1,935	1,131	2,443	1,042	624	383	534	845	1,950	4,140	2,467	518	22,662
1989–90[1]	1,050	333	538	1,818	959	2,162	1,045	545	417	557	747	1,850	4,519	1,727	546	21,654
1990–1[1]	980	292	506	1,865	930	1,857	1,053	520	431	543	621	1,900	4,398	2,222	523	21,356
1991–2[3]	N.A.	N.A.	495	1,083	950	1,835	555	580	195	N.A.	430	1,950	4,594	1,400	480	

[1] Preliminary. [2] Commercial crop. [3] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.18

Salient Statistics of Apples[1] in the United States

Year	Production: Total (Millions of Pounds)	Production: Utilized (Millions of Pounds)	Growers Prices: Fresh ¢ Lb.	Growers Prices: Processing $ Ton	Utilization of Quantities Sold: Fresh (Millions of Pounds)	Processed[5]: Canned	Processed[5]: Dried	Processed[5]: Frozen	Processed[5]: Juice & Cider	Processed[5]: Other[3]	Avg. Farm Price ¢ Per Lb.	Farm Value Million $	Foreign Trade[4]: Domestic Exports: Fresh (Metric Tons)	Foreign Trade[4]: Domestic Exports: Dried[5] (Metric Tons)	Foreign Trade[4]: Imports Fresh & Dried[5] (Metric Tons)	Fresh Per Capita Consumption Lbs.
1977	6,740	6,710	13.80	122.00	3,860	1,076	226	161	1,267	121	10.60	708.6	142.4	8.2	63.6	16.5
1978	7,597	7,544	13.90	117.00	4,210	1,224	221	207	1,495	186	10.40	781.4	154.8	7.3	78.5	18.0
1979	8,126	8,101	15.40	114.00	4,289	1,337	256	137	1,954	130	10.90	881.2	237.3	5.5	71.2	17.2
1980	8,818	8,800	12.10	84.00	4,934	1,202	195	168	2,137	165	8.70	761.3	311.3	7.6	76.8	19.2
1981	7,740	7,693	15.40	102.00	4,442	1,002	190	173	1,798	87	11.10	851.1	269.2	8.3	128.3	17.2
1982	8,122	8,110	13.20	118.00	4,537	1,249	210	191	1,808	116	10.00	809.0	261.8	16.1	98.7	17.7
1983	8,379	8,358	14.80	104.00	4,621	1,204	283	170	1,985	95	10.50	879.0	228.7	12.0	126.0	18.4
1984	8,324	8,309	15.50	112.00	4,655	1,177	289	198	1,889	102	11.20	927.6	205.2	9.3	132.6	18.6
1985	7,915	7,827	17.30	103.00	4,222	1,255	242	194	1,839	74	11.70	914.3	147.1	5.5	152.6	17.5
1986	7,859	7,833	19.10	116.00	4,464	1,179	199	257	1,643	91	13.40	1,046.8	175.1	10.5	149.4	18.1
1987	10,742	10,451	12.70	79.30	5,610	1,306	284	249	2,929	74	8.60	903.1	296.2	7.7	132.7	21.2
1988	9,131	9,078	17.40	123.00	5,240	1,399	285	266	1,824	67	12.70	1,150.4	254.5	12.0	133	19.9
1989[2]	9,963	9,917	13.90	107.00	5,865	1,320	282	322	2,071	57	10.40	1,007	333		118	21.6
1990[2]	9,697	9,658	20.90	139.00	5,551	1,396	260	306	2,076	69	15.00					19.8
1991[6]	10,128															

[1] Commercial crop. [2] Preliminary. [3] Mostly crushed for vinegar, jam, etc. [4] Year beginning July. [5] Fresh weight basis. [6] Estimate.
Source: Statistical Reporting Service, U.S.D.A. T.19

U.S. Price of Apples Received by Growers (for Fresh Use) In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	13.5	13.9	14.1	13.9	13.9	13.0	16.2	14.9	14.9	13.3	14.2	14.3	14.2
1980	14.1	14.9	16.6	17.0	17.9	21.0	24.6	17.5	15.7	12.5	11.5	10.7	16.2
1981	10.7	12.4	12.1	11.3	10.7	10.5	12.7	14.6	16.0	16.0	16.1	15.7	13.2
1982	14.1	15.7	16.0	14.5	16.2	17.7	15.3	12.8	16.3	14.5	13.9	13.0	15.3
1983	11.0	12.2	12.0	11.3	11.9	11.1	12.0	16.0	15.9	14.9	14.6	14.0	13.2
1984	14.3	15.1	15.2	14.8	15.0	14.6	14.9	16.5	18.5	17.4	16.4	15.6	15.5
1985	14.0	14.3	15.7	15.1	14.1	13.1	12.6	12.1	16.4	15.4	16.4	16.6	17.3
1986	16.6	17.2	17.2	17.2	20.7	21.0	28.5	27.6	20.9	18.0	17.3	16.5	19.1
1987	18.3	19.0	18.0	19.1	22.4	24.6	25.5	15.2	14.8	12.1	11.4	10.4	12.7
1988	11.1	12.9	12.5	11.0	10.9	10.4	22.8	27.7	23.7	18.5	17.5	17.4	17.4
1989	18.1	18.0	16.6	14.4	13.5	10.8	11.5	15.9	16.8	14.3	13.3	12.1	14.6
1990	12.2	12.4	12.3	12.0	12.6	13.7	20.3	22.3	24.5	19.3	19.6	20.8	16.8
1991[1]	20.0	20.3	20.2	19.9	22.5	24.2	24.8	24.6	29.1	24.9			

[1] Preliminary. *Source: Economic Res. Service, U.S.D.A* T.20

Arsenic

The U.S. imports all of its arsenic, primarily as arsenic trioxide that is converted into arsenic acid prior to use. Three companies imported arsenic trioxide in 1991 for the production of arsenical wood preservatives. They accounted for 70 percent of the year's apparent domestic consumption of contained arsenic of 20,000 tonnes. Arsenic trioxide imports fell to 25,000 tonnes from 26,256 in 1990. Metal imports were 1,000 tonnes.

In November 1991, the Environmental Protection Agency announced a preliminary decision to cancel the registration of arsenic acid products for use as a desiccant on cotton, citing potential cancer risks. Paraquat was considered the likely replacement for those products. There are no available substitutes for arsenicals to control some diseases that affect grapes and grapefruit. Agricultural chemicals accounted for 21 percent of U.S. consumption in 1991.

The remaining consumption, all of which used metallic arsenic, in 1991 was: nonferrous alloys, 4 percent; glass, 4 percent; and other uses, 1 percent. The total value of the metal and compounds used in 1991 was estimated at $16 million. The price of arsenic trioxide imported from Mexico rose 1 cent to 24 cents/lb. But the price of Chinese arsenic metal fell to 68 cents from $1.80 a year earlier, when shipment disruptions had led to artificially high prices.

World mine production of arsenic fell to 47,000 tonnes in 1991 from 48,000 in 1990. Arsenic is a byproduct of copper, lead, and gold mining, and supply and demand for arsenic are not particularly balanced. A Finnish trioxide producer ceased operations in 1991 because of low prices, while in Sweden a producer closed because of environmental problems. A labor problem reduced French output to 4,500 tonnes from 7,000 in 1990. These cuts reduced output of high-purity (99 percent pure or more) arsenic trioxide. Output of lower purity trioxide increased in Chile, China and the Philippines.

World Production of White Arsenic (Arsenic Trioxide) In Metric Tons

Year	Belgium	Bolivia	Canada[4]	Chile	France	Japan	Mexico	Namibia[3]	Peru	Philippines	Portugal	Sweden	USSR	West Germany	World Total
1979				—	5,550	182	6,537	2,221	1,415	—		5,080	7,700	—	29,620
1980		81		—	5,300	284	6,932	1,288	2,475	—		6,500	7.700	360	31,199
1981	3,000	127	2,000	—	5,200	95	6,517	1,370	2,164	—		6,900	7,750	360	43,731
1982	3,000	261	2,000	—	6,000	100	4,740	1,895	1,910	—	200	9,000	7,800	360	45,572
1983	3,000	107	2,000	—	4,727	300	4,557	1,126	1,009	—	180	9,000	7,900	360	42,126
1984	3,000	144	3,000	3,500	3,828	500	5,496	2,504	1,090	—	180	10,000	8,000	360	48,402
1985	3,000	361	3,000	4,000	8,000	500	4,782	2,471	1,257	5,000	204	10,000	8,100	360	53,235
1986	3,000	241	3,000	4,000	10,000	500	5,315	2,208	1,273	5,000	176	10,000	8,100	360	53,173
1987	3,500	132	3,000	3,616	10,000	500	5,304	1,864	1,757	5,000	218	10,000	8,100	360	52,351
1988	3,500	191	2,000	3,207	10,000	500	5,164	2,983	828	5,000	214	10,000	8,100	360	52,047
1989	3,500	350	2,000	3,400	10,000	500	5,100	2,900	1,000	5,000	180	10,000	8,100	360	52,390
1990[1]	3,500		2,000	3,400	7,000		4,900	2,000	600	5,092		10,000	7,800		48,000
1991[2]	2,500		2,000	7,000	4,500		4,000	3,000	600	6,000		8,000	7,800		48,000

[1] Preliminary. [2] Estimate. [3] Output of Tsumeb Corp. Ltd. only. [4] Includes low-grade dusts that were exported to the U.S. for further refining. *Source: Bureau of Mines*
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U.S. Arsenic Supply—Demand Relationships In Metric Tons (Arsenic Content)

	Supply				Distribution		Estimated Demand Pattern						Avg. Price			
	Imports												— ¢ Lb. —			
Year	Metal	Compounds	Industry Stocks Jan. 1	Total	Apparent Demand	Industry Stocks Dec. 31	Agri. Chemicals	Glass	Industrial Chem.	Non-Ferrous Alloys & Elec.	Other	Total	Tri-Oxide Mex.	Metal Chinese	Imports[3] Trioxide	Exports
1986	400	20,200	900	21,500	21,100	400	5,300	800	14,100	400	500	21,100	44	185	25,728	217
1987	600	21,100	400	22,100	21,900	200	5,000	900	15,100	400	500	21,900	36	95	26,843	167
1988	600	21,700	200	22,500	22,400	100	5,200	900	15,500	400	400	22,400	33	73	28,056	400
1989[1]	900	21,500	100	22,500	22,400	100	4,900	900	15,700	700	200	22,400	27	47	28,348	126
1990[2]	800	19,900	100	20,800	20,700	100	4,600	800	14,500	600	200	20,700	23	180	26,256	190

[1] Preliminary. [2] Estimate. [3] For Consumption. *Source: Bureau of Mines*

Barley

World barley production in 1991/92 was forecast by USDA to be 170 million tonnes, 9 percent less than the previous season. The EC replaced the Soviet Commonwealth as the largest producer with output projected at 51 million tonnes. The Soviet crop, estimated at 43 million tonnes, was off almost a third from the year before. Eastern Europe was due to produce over 14 million tonnes, the same as a year earlier, while Canada's crop of almost 13 million tonnes was 10 percent lower.

Global trade in barley in 1991/92 was forecast to contract slightly to under 18 million tonnes. Shipments by the EC, the chief exporter, were slated to rise by 7 percent to 8 million tonnes. Canadian exports were to grow a little to 4 million tonnes, while Australia was projected to ship 2 million tonnes, 25 percent less than the year before.

The Soviets have emerged as the largest buyer of barley, surpassing Saudi Arabia, and their imports were forecast at over 5 million tonnes, up nearly 30 percent. Saudi Arabia was expected to purchase 5 million tonnes of barley, almost 20 percent more than in 1990/91. Eastern European countries were likely to import 1 million tonnes, while Japan was to take 1.3 million.

World consumption was due to fall about 6 percent in 1991/92 to 173 million tonnes. Global ending stocks of barley were expected to decline by 10 percent to just over 27 million tonnes. Stocks have been in a fairly steady drawdown for several years.

U.S. producers planted 700,000 acres more in 1991/92, bringing total barley acreage to 8.9 million. This was partly in response to a cut in the acreage reduction requirement from 10 percent to 7.5 percent. Harvested area rose by nearly 1 million acres to 8.4 million. Conditions in the Pacific Northwest were favorable, and yields in Idaho, Washington and Montana increased. In North Dakota, the major producing state, acreage planted rose, but yields declined. Yields in Minnesota, an important producer of malting barley, fell because of excessive moisture. The national average yield was around 56 bushels per acre, about the same as the previous season. The U.S. crop totaled 464 million bushels, up 10 percent.

U.S. imports were slated to rise to 20 million bushels in 1991/92 from 15 million the year before. Use of barley for feeding was to expand to 215 million bushels from 199 million. Food, seed and industrial use was put at 175 million bushels, down slightly. Exports were to expand to 85 million bushels from 80 million the previous year. In a competitive climate, U.S. barley exports rely on subsidized sales under the Export Enhancement Program to Saudia Arabia, Jordan, and Algeria.

Domestic ending stocks were due to rise to 45 million bushels from 135 million in 1990/91.

U.S. Farm Program

The target price for barley was set at $2.36 a bushel for both 1991 and 1992, and the loan rate was $1.32 in 1991 and $1.40 in 1992.

Futures Markets

Feed barley futures are traded on the Winnipeg Grain Exchange.

World Barley Supply and Demand In Millions of Metric Tons

	Exports						Imports			Utilization				Stocks[2]		
Crop Year	Australia	Canada	EC-12	Total Non-U.S.	U.S.	Total Exports	Saudi Arabia	Total Imports	Production	U.S.S.R.	Non-U.S.	U.S.	Total Utilization	Non-U.S.	U.S.	Total Stocks
1984–85	4.7	2.4	7.6	16.8	1.2	18.0	4.7	18.0	175.5	45.2	157.8	10.3	168.1	19.1	5.4	24.4
1985–86	3.7	4.8	7.3	17.6	.8	18.4	6.6	18.4	178.0	48.6	161.8	10.9	172.7	22.6	7.1	29.7
1986–87	2.2	6.0	6.2	15.6	3.0	18.6	9.0	18.6	182.4	56.6	167.8	10.3	178.1	26.7	7.3	34.0
1987–88	1.6	3.5	7.0	13.1	2.9	16.0	4.8	16.0	181.3	60.9	173.8	9.3	183.1	25.2	7.0	32.2
1988–89	1.4	3.4	9.0	15.1	1.7	16.8	4.6	16.8	168.7	48.2	162.6	7.5	170.1	26.5	4.3	30.8
1989–90	2.4	3.7	6.7	13.4	1.9	15.3	3.3	15.3	170.1	51.9	165.5	8.0	173.5	23.9	3.5	27.4
1990–1[1]	2.7	4.3	7.5	16.4	1.5	17.9	4.2	17.9	186.3	64.0	175.9	8.3	184.2	26.5	2.9	29.4
1991-2[3]	2.0	4.5	8.0	15.9	1.9	17.7	5.0	17.7	170.1	50.5	164.0	8.5	172.5	23.9	3.2	27.1

[1] Preliminary. [2] End of crop year season. [3] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.29A

World Production of Barley In Thousands of Metric Tons

Crop Years	China	United States	Australia	Canada	Rep. of Korea	Denmark	Morocco	France	India	Japan	USSR	Germany	Spain	Turkey	United Kingdom	World Total
1984–5	7,300	13,046	5,554	10,279	804	6,072	1,405	11,699	1,834	396	41,800	10,284	10,000	6,000	11,055	175,500
1985–6	6,200	12,876	4,868	12,387	571	5,251	2,225	11,470	1,556	378	46,500	9,690	9,980	5,800	9,740	178,000
1986–7	5,632	13,293	3,611	14,634	453	5,134	3,563	9,950	1,962	344	53,900	9,377	7,431	6,300	10,015	182,428
1987–8	6,041	11,354	3,477	13,957	516	4,292	1,543	10,528	1,669	353	58,409	8,571	9,282	6,000	9,225	181,511
1988–9	6,041	6,314	3,306	10,212	562	5,419	3,454	9,800	1,577	399	44,500	9,587	12,070	6,000	8,775	167,302
1989–90	6,180	8,784	4,044	11,666	516	4,982	2,999	9,840	1,721	371	48,500	9,716	9,100	4,900	8,025	169,680
1990–1[1]	5,688	9,121	4,055	13,925							57,000			6,000		186,300
1991–2[2]	5,700	10,100	3,700	12,463							43,000			6,800		170,600

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.23

BARLEY

U.S. Barley Acreage and Prices

Year Beginning June 1	Acreage (Million Acres) National Program	Set-aside	Planted	Harvested for Grain	Yield per Harvested Acre in Bushels	Seasonal Prices Received by Farmers[1]	Minneapolis[2] or Better Feed (No. 2)	Malting (No. 3)	Portland No. 2 Western	Govt. Price Support Operations National Avg. Loan Rate	Target Price	Put Under Support (Mil. Bu.)	Total Payments to Participants[6] (Mil. $)
						Dollars per Bushel							
1984–5	—	.5	12.0	11.2	53.4	2.29	2.09	2.55	2.59	2.08	2.60	57.0	50[10]
1985–6	—	.7	13.2	11.6	51.0	1.98	1.53	2.24	2.23	2.08	2.60	159.3	159[10]
1986–7	—	1.8	13.1	12.0	50.8	1.61	1.44	1.89	1.96	1.56	2.60	164.7	351[3]
1987–8	—	2.9	11.0	10.0	52.4	1.81	1.78	2.04	2.09	1.49	2.60	122.7	337[3]
1988–9		2.8	9.8	7.6	38.0	2.80	2.32	4.11	2.74	1.44	2.51	22.0	179[9]
1989–90[4]	—	2.3	9.1	8.3	48.6	2.42	2.20	3.20	2.64	1.34	2.43		78[9]
1990–1[4]	—	2.9	8.2	7.5	56.1	2.14	2.13	2.42	2.65	1.28	2.36		59[8]
1991–2[5]		2.2	8.9	8.4	55.2	2.10				1.32	2.36		

[1] Excludes support payments. [2] Duluth beginning March 1987. [3] Deficiency & diversion payments. [4] Preliminary. [5] Estimate. [6] Available for total feed grains only. [7] Disaster payments. [8] Deficiency & disaster payments. [9] Deficiency, disaster & diversion payments. [10] Deficiency payments. *Source: Economic Research Service, U.S.D.A.*

T.24

Salient Statistics of Barley in the United States In Millions of Bushels

Year Begin. June 1	Supply Beginning Stocks	Production	Imports	Total Supply	Disappearance Domestic Use Food	Alc. Beverages	Seed	Feed & Residual	Total	Exports	Total Disapp.	Ending Stocks Gov't. Owned[1]	Privately Owned[2]	Total Stocks
1984–5	189.4	598.0	7.5	794.9	— 149.0 —		21.4	305.5	475.9	71.6	547.5	15.6	231.8	247.4
1985–6	247.4	590.2	6.2	843.8	— 147.2 —		21.3	328.3	496.8	19.8	516.6	57.4	269.8	327.2
1986–7	327.2	608.5	6.6	942.3	— 156.1 —		17.9	298.4	472.4	133.6	606.0	75.5	260.8	336.3
1987–8	336.3	521.5	11.3	869.1	— 158.3 —		15.7	253.1	427.1	120.9	548.0	50.1	271.0	321.1
1988–9	321.1	290.0	10.5	621.6	— 164.7 —		15.0	166.2	345.9	79.3	425.2	30.4	166.0	196.4
1989–0	196.4	404.2	14.2	614.8	— 165.4 —		14.4	185.2	365.0	89.0	453.9	19.0	141.8	160.8
1990–1[3]	160.8	418.9	15.0	594.7	— 185.0 —			175.0	360.0	85.0	445.0			150.0
1991–2[4]	135.4	464.5	20.0	619.9	— 175.0 —			214.9	389.9	85.0	474.9			145.0

[1] Uncommitted inventory. [2] Includes quantity under loan & farmer-owned reserve. [3] Preliminary. [4] Estimate.
Source: Economic Research Service, U.S.D.A.

T.29

High, Low & Closing Prices of May Barley Futures at Winnipeg In Canadian Dollars per Tonne

Year of Delivery		Year Prior to Delivery June	July	Aug.	Sept	Oct.	Nov.	Dec.	Delivery Year Jan.	Feb.	Mar.	Apr.	May	Life of Delivery Range
1985	High	136.00	138.50	137.00	134.30	135.20	138.80	139.10	138.10	137.80	138.20	142.00	149.00	149.00
	Low	130.10	124.30	129.80	129.70	132.20	133.80	136.50	136.20	130.40	134.00	138.20	128.50	124.30
	Close	131.50	137.50	130.10	134.20	134.20	138.10	137.10	137.80	134.80	138.00	142.00	129.60	—
1986	High	—	131.10	120.40	117.00	116.90	116.20	115.60	114.40	105.40	102.60	102.30	116.00	131.10
	Low	—	121.90	113.70	111.10	113.00	114.50	112.60	104.50	100.40	98.70	84.60	87.80	84.60
	Close	—	122.00	114.10	113.70	115.70	115.45	113.60	104.90	100.90	102.20	92.80	115.10	—
1987	High	—	86.50	85.50	89.90	88.20	87.40	85.40	85.50	83.40	80.30	79.50	86.50	89.90
	Low	—	85.30	83.50	83.20	83.20	82.70	84.00	83.00	77.20	76.50	74.00	76.00	74.00
	Close	—	85.30	83.60	88.90	84.00	85.10	84.40	83.50	78.30	78.30	76.30	78.10	—
1988	High	87.30	82.00	74.70	74.30	72.60	76.00	74.90	78.50	76.80	73.70	78.00	101.40	101.40
	Low	77.10	73.20	72.50	72.30	70.50	69.00	71.20	72.80	73.10	69.50	74.50	76.10	69.00
	Close	83.00	75.20	72.50	72.40	70.60	74.60	74.30	73.40	74.20	73.70	78.00	98.50	—
1989	High	135.10	140.00	138.20	145.50	142.40	139.50	139.10	139.50	129.40	127.30	120.00	118.00	145.50
	Low	111.00	120.00	129.80	138.00	135.00	129.70	131.40	127.90	120.90	119.30	101.00	104.90	101.00
	Close	130.00	130.30	138.20	139.20	138.70	132.00	138.10	129.10	125.00	119.60	104.00	117.80	—
1990	High	—	—	—	116.80	115.80	120.20	120.80	120.70	117.70	113.30	111.20	115.30	120.80
	Low	—	—	—	109.60	112.40	113.90	118.60	116.20	110.80	107.80	103.00	105.10	103.00
	Close	—	—	—	109.60	114.70	120.00	119.20	117.20	111.80	108.50	104.50	113.00	—
1991	High	—	—	—	99.00	102.00	101.00	94.90						
	Low	—	—	—	94.00	96.80	95.50	90.40						
	Close	—	—	—	98.00	100.90	96.00	92.80						
1992	High	94.00	92.00	95.80	93.80	94.60	93.20	93.20						
	Low	88.90	84.50	88.00	89.50	91.00	90.20	87.90						
	Close	89.00	91.00	90.00	93.80	92.30	91.30	88.50						

Source: Winnipeg Commodity Exchange

T.26

Average Cash Price of No. 2 (or better) Feed Barley, in Duluth[2] In Cents Per Bushel

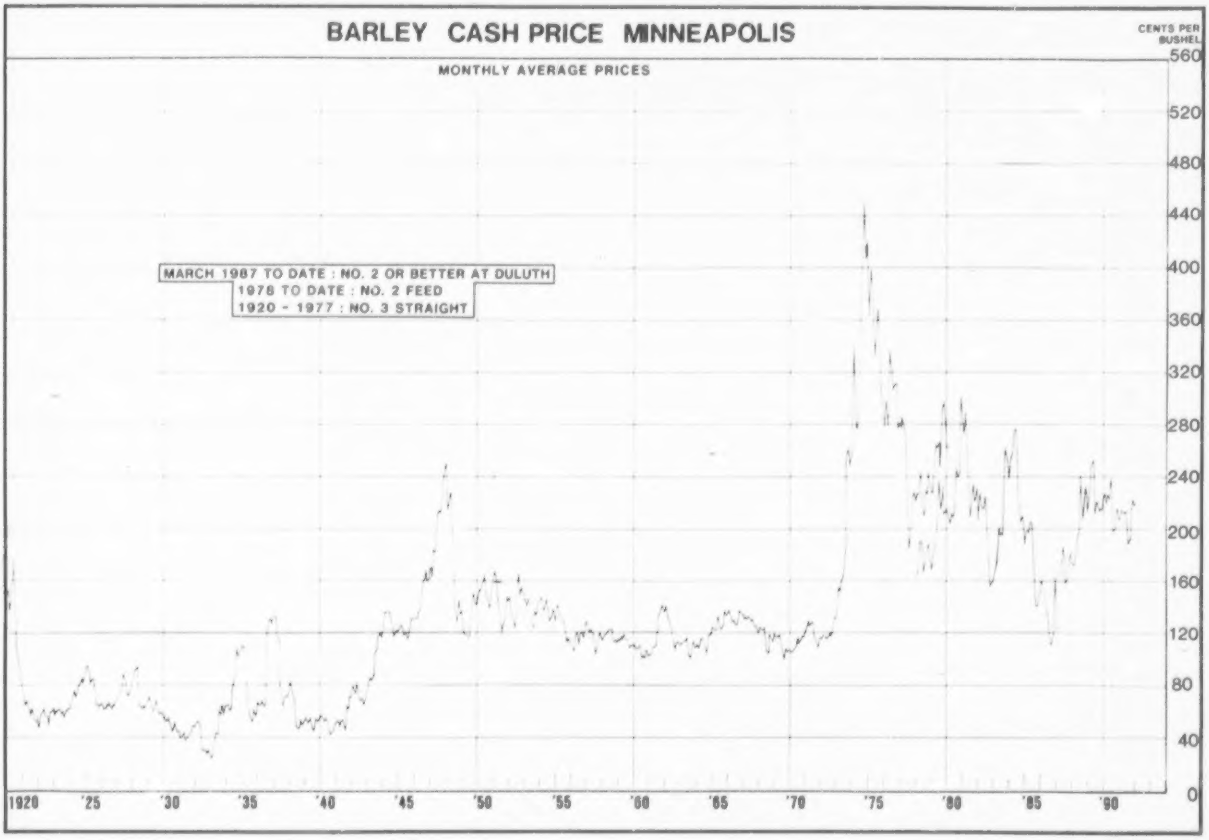
Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
1983–4	196	195	242	261	260	253	239	255	256	265	274	277	248
1984–5	259	218	213	205	210	206	188	198	199	197	205	205	209
1985–6	190	166	146	140	141	149	160	157	—	—	—	131	153
1986–7	123	116	113	127	150	163	123	—	—	164[2]	176	186	144
1987–8	173	159	160	176	178	182	174	172	177	188	194	198	178
1988–9	241	228	208	224	232	227	214	224	233	249	252	241	231
1989–90	212	211	217	213	216	215	223	228	220	227	227	233	220
1990–1	239	217	199	201	211	216	207	209	215	214	212	213	213
1991–2[1]	202	189	192	208	218	223	218	220					

[1] Preliminary. [2] Prior to March 1987 prices are at Minneapolis. *Source: Economic Research Service, U.S.D.A.* T.27

Average Open Interest of Barley Futures at Winnipeg In Contracts (20 Tonne)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	8,675	10,760	9,142	10,267	10,739	12,743	11,852	16,199	18,696	17,109	16,823	12,768
1984	10,319	10,783	10,001	11,628	11,068	11,178	13,749	13,513	13,679	11,307	10,108	10,323
1985	9,946	11,547	10,180	9,499	8,259	8,796	9,214	9,539	9,660	9,736	9,966	8,205
1986	7,671	8,142	9,041	9,485	9,105	8,194	8,365	8,744	8,886	8,918	8,408	8,938
1987	8,034	8,489	8,270	9,427	10,532	11,553	9,927	9,089	10,095	12,628	13,077	12,289
1988	15,297	20,531	21,466	25,212	24,200	30,207	34,346	33,886	32,925	29,227	24,615	21,282
1989	20,949	18,756	14,592	13,237	12,382	9,744	8,276	10,366	14,411	13,495	12,181	10,875
1990	9,926	10,320	10,040	9,815	10,877	11,165	11,190	10,483	11,152	10,572	8,968	7,164
1991	7,005	6,808	5,952	6,410	5,520	6,169	6,287	6,198	6,240	5,558	6,746	5,977

Source: Winnipeg Commodity Exchange T.28



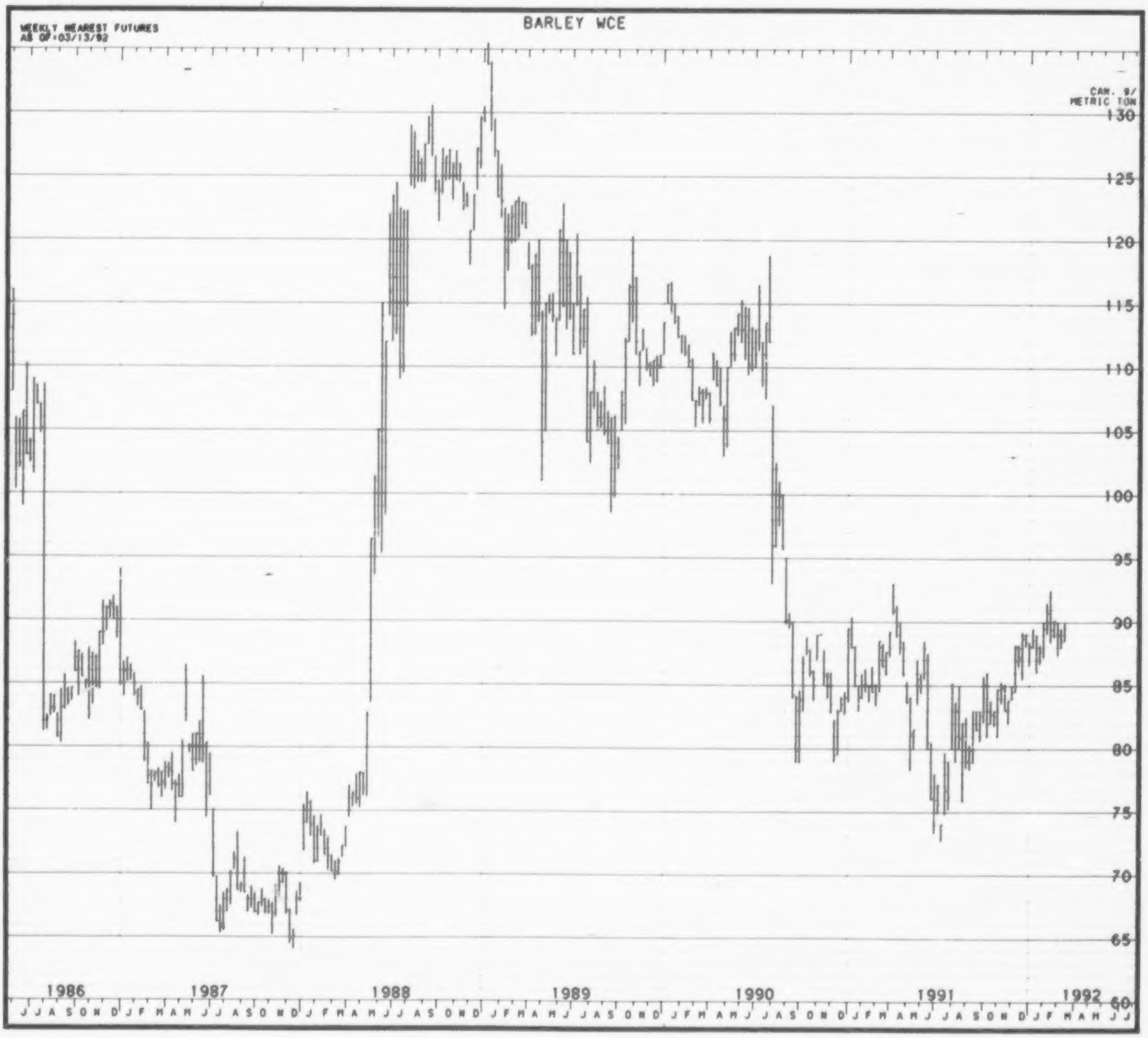
BARLEY

Production of Barley in the United States, by States In Millions of Bushels

Year	Arizona	California	Colorado	Idaho	Kansas	Minnesota	Maryland	Oklahoma	Montana	North Dakota	Oregon	Pennsylvania	Utah	South Dakota	Washington	Wyoming
1980	4.5	44.1	15.9	59.0	2.1	34.6	3.4	1.7	44.1	48.0	10.1	3.8	10.8	15.2	32.3	8.6
1981	4.1	40.3	18.6	63.1	1.7	57.7	5.0	1.6	56.8	105.6	11.7	4.1	11.1	20.1	44.1	9.0
1982	3.8	38.4	15.9	75.9	2.5	51.0	5.4	1.1	76.4	103.4	15.5	3.4	12.9	23.4	49.4	9.4
1983	2.8	29.4	16.5	67.0	4.6	43.5	5.0	1.5	77.7	114.7	16.5	3.6	11.4	23.1	54.4	10.0
1984	5.4	29.0	20.2	88.4	6.7	61.8	5.5	2.1	59.1	153.7	17.4	3.6	11.6	30.3	63.7	10.4
1985	6.0	24.8	21.8	71.9	9.7	71.0	5.5	1.9	30.0	184.3	19.3	4.3	11.8	32.4	56.6	10.6
1986	2.9	23.6	21.0	72.2	10.4	55.0	4.9	1.3	85.0	176.0	20.8	3.9	11.6	35.9	45.0	10.9
1987	2.2	17.8	14.1	61.5	4.8	49.6	5.0	.8	94.5	139.2	14.0	3.4	11.8	34.0	35.5	9.1
1988	1.4	17.1	11.7	51.0	3.0	27.2	4.8	.8	30.0	45.2	14.8	3.6	9.6	8.1	34.7	6.7
1989	1.2	14.5	12.2	59.5	.6	44.0	4.0	.8	68.8	98.1	12.1	5.0	9.0	19.3	28.4	7.0
1990	1.6	13.3	12.0	56.2	.9	50.4	4.3	.7	56.6	129.9	9.1	4.1	8.5	24.5	22.6	9.3
1991[1]	2.4	9.4	10.4	59.3	.8	43.8	5.0	.4	85.8	138.7	12.6	4.2	7.9	18.0	37.1	10.5

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.*

T.25



Bauxite

The 1990 closure of the Aluminum Company of America's (Alcoa) Arkansas bauxite mining operation had a significant impact on domestic production in 1991. In the second quarter, the country's bauxite production was down some 88 percent from the same period of 1989, and the U.S. Bureau of Mines indicated that domestic output had fallen considerably since 1988.

For the first five months of 1991, U.S. imports of calcinated bauxite were running lower than those for the same period of 1990. The Bureau of Mines put the amount at 136,000 tonnes, versus full-year 1990 refractory-grade calcinated bauxite imports of 210,000 tonnes. China and Guyana were the primary suppliers to the U.S. during early 1991.

In the first five months of 1991, U.S. imports of crude and dried bauxite for consumption were down by seven percent, compared with the same period of 1990, the Bureau said. For the period January through May, the U.S. imported 4.6 million tonnes of crude and dried bauxite, compared with full-year 1990 imports of 12.1 million.

The U.S. imports from four major sources, Jamaica, Guinea, Brazil and Australia. Jamaica supplied the U.S. with 3.8 million tonnes in 1990, followed by Guinea with 3.6 million tonnes, Brazil with 1.8 million, and Australia with 1.4 million.

In 1990, the U.S. imported 4 million tonnes of alumina with the majority coming from Australia, which supplied 3.4 million. For the first five months of 1991, Australian alumina exports to the U.S. totaled 1.4 million tonnes.

World production of bauxite in 1990 amounted to an estimated 112.1 million tonnes, compared with 1989's output of 105.6 million. Production occurs in 29 nations, of which Australia with 40.6 million tonnes annually is the largest, followed by Guinea with 16.5 million and Jamaica with 13.9 million.

World production of alumina totaled 40.1 million tonnes in 1990. Australia was the chief producer with 11.2 million tonnes, followed by the U.S. with 5.2 million tonnes, and the USSR with 3.3 million. In 1989, total world alumina output was 38.9 million tonnes.

Bauxite stocks in the U.S. were about unchanged at the end of 1990, standing at 20.7 million tonnes, compared with 20.9 million at end-1989. Alumina stocks were also little changed at an estimated 2.0 million tonnes, versus 1989's 1.9 million end-year total.

World Production of Bauxite In Thousands of Metric Tons

Year	Australia	Brazil	China	France	Greece	Guinea	Guyana[2]	Hungary	Indonesia	Jamaica[3]	India	Suriname	USSR[3]	U.S.[3]	Yugoslavia	World Total
1980	27,179	5,538	1,500	1,921	3,286	11,862	1,844	2,950	1,249	12,054	1,785	4,646	4,600	1,559	3,138	89,220
1981	25,441	5,770	1,500	1,827	3,216	11,112	1,681	2,914	1,203	11,682	1,923	4,006	4,600	1,510	3,249	85,347
1982	23,625	6,289	1,500	1,662	2,853	11,827	1,783	2,627	700	8,378	1,854	4,205	4,600	732	3,668	79,335
1983	24,372	7,199	1,600	1,663	2,455	12,421	1,087	2,917	778	7,683	1,976	3,400	4,600	679	3,500	78,687
1984	31,537	6,433	1,600	1,607	2,296	13,160	1,333	2,994	1,003	8,937	2,093	3,454	4,600	856	3,347	87,799
1985	31,839	5,846	1,650	1,530	2,453	11,790	1,675	2,815	830	6,239	2,281	3,738	4,600	674	3,538	84,189
1986	32,384	6,544	1,650	1,379	2,230	13,300	2,074	3,022	650	6,944	2,322	3,731	4,600	510	3,459	87,751
1987	34,102	6,567	2,400	1,271	2,472	13,500	2,785	3,101	635	7,660	2,736	2,522	4,600	576	3,394	91,724
1988[1]	36,192	7,728	3,500	878	2,400	15,600	1,774	2,593	513	7,408	3,961	3,434	4,600	588	3,034	97,946
1989[2]	38,583	8,500	4,000	800	2,400	16,523	1,281	2,700	862	9,395	4,768	3,530	4,600	N.A.	3,252	105,029
1990[2]	40,697	8,750			2,500	16,500	1,300	2,600		10,900	5,000	3,500	4,600		3,100	109,100
1991[2]	41,000	9,900			2,500	17,500				11,100	4,400					109,300

[1] Preliminary. [2] Estimate. [3] Dry Bauxite equivalent of ore processed. *Source: Bureau of Mines* T.30

U.S. Salient Statistics of Bauxite In Thousands of Metric Tons

Year	Net Import Reliance as a % of Apparent Consumption	Av. Price F.O.B. Mine $ per Ton	Mine Production			Recovery[1] of Processed Bauxite			Dry Equivalent			Stocks, Dec. 31			
							Recovered[1]								
			Crude	Dried Equivalent	Value ($1,000)	Crude Ore Treated	Total	Dried Equiv.	Imports[2] (for Consumption)	Exports[2]	Consumption	Producers & Processors	Consumers	Govt.	Total
1980	94	6–16	1,869	1,559	22,353	355	179	277	14,087	21	15,962	662	7,681	14,661	23,004
1981	94	8–20	1,847	1,510	26,489	419	187	328	12,802	20	13,525	897	7,395	14,661	22,953
1982	96	8–20	896	732	12,334	234	120	184	10,122	49	9,217	614	6,548	16,326	23,488
1983	96	13–20	826	679	11,309	293	140	225	7,601	74	9,100	552	5,061	16,326	21,939
1984	96	13–20	1,054	856	15,643	361	168	294	9,435	82	10,519	499	4,382	17,338	22,219
1985	96	13–20	787	674	12,855	330	166	284	7,158	56	8,206	220	3,423	18,357	22,000
1986	96	13–17	617	510	10,361	250	128	196	6,456	69	6,901	186	3,133	18,472	21,791
1987	96	13–17	689	576	10,916	131	62	102	9,156	201	9,548	183	2,836	18,472	21,491
1988[3]	97	13–17	714	588	10,566	N.A.			9,944	63	10,074	3,021		18,474	21,495
1989[4]	96	15–20	N.A.	N.A.					10,666	44	11,805	2,891		18,474	21,365
1990[4]	98	15–20	N.A.	N.A.					13,500	75	12,000	3,000			
1991[3]	100	15–20							13,100			2,800			

[1] Calcined, or sintered. [2] Including concentrates. [3] Preliminary. [4] Estimate. *Source: Bureau of Mines* T.31

Bismuth

According to the U.S. Bureau of Mines, bismuth consumption in the first quarter of 1991 was off 20 percent from the same 1990 period, and second-quarter use was off 9 percent from a year earlier. This continued a three-year trend of lower consumption, led by declining usage in the pharmaceutical and chemical industries.

Though consumption fell in 1991, the market appeared to have found a bottom at around $2.80 cents a pound, and by year's end was climbing back to around $3.15 a pound in dealer quotes. The renewed price rise was attributed to concerns about a possible reduction in global supplies of bismuth, due to mine closures.

Because bismuth is a byproduct of lead, tin, and tungsten mining, its output depends heavily upon the production of these metals. In 1991's second half, Korea Tungsten Mining Co. Ltd., a major tungsten producer, announced that it was halting bismuth production as a result of price-related declines in tungsten output. Rio Tinto Zinc Co. said that it too was shutting down about 150 tonnes of bismuth production, the result of lower tin prices.

For the first six months of 1991, U.S. bismuth consumption was 666,681 kilograms, compared with 1990's total consumption of 1.2 million kilograms. The chemicals industry was the largest user of bismuth metal, consuming 302,136 kilograms for the first six months and 577,341 kilograms for all of 1990. That included usage for pharmaceuticals, industrial and laboratory chemicals, and cosmetics.

Metallurgical additives, mostly for free machining aluminum and steel products, accounted for 212,649 kilograms of use in 1991's first half.

U.S. bismuth imports for consumption decreased in the first five months of 1991 from the same period in 1990. Imports for the Jan.-May period totaled 488,830 kilograms, compared with full-year 1990's imports of 1.6 million kilograms. Mexico was the largest supplier to the U.S., providing a five-month total of 244,635 kilograms, compared with full-year 1990's 404,821 kilograms. In 1990, Belgium was the largest supplier of imported bismuth with 668,071 kilograms. In 1991, Belgium's exports to the U.S. slipped and were only 98,420 kilograms for the first five months.

Because of declining bismuth demand, U.S. consumer stocks rose to 380,782 kilograms by June 1991 from final 1990 stocks of 343,952 kilograms.

World Production of Bismuth In Metric Tons

	Mine Output. Metal Content								Refined Metal							
Year	Australia	Canada	China	Japan	Rep. of Korea	Mexico	Peru	Total	Belgium	Canada	China	W. Germany	Japan	Mexico	Peru	Total
1986	1,000	153	500	190	136	749	605	3,658	1,000	212	500	100	640	519	569	4,077
1987	350	165	600	165	145	1,012	412	3,173	865	218	600	300	546	561	387	4,078
1988	400	181	750	160	132	958	363	3,220	1,000	225	750	N.A.	524	622	340	4,098
1989[1]	500	164	750	150	96	883	687	3,556	800	272	750	N.A.	502	597	650	4,082
1990[2]	400	165	750	135	90	750	585	3,200	800	280	750	N.A.	450	475	550	3,710
1991[2]	400	200	900	130	40	650	600	3,200								

U.S. Salient Statistics of Bismuth In Metric Tons[4]

	World[6] Production		Bismuth Consumed, By Uses								Imports of Metallic Bismuth from				
Year	Mines[5]	Refined	Metallurgical Additives	Other Alloys	Fusible Alloys	Chemicals[3]	Other Uses	Total Consumption	Consumer Stocks Dec. 31	Exports of Metal & Alloys	Peru	Mexico	Belgium	Total	Dealer Price $ Per Pound
1980			467.9	26.5	650.9	1,115.6	26.7	2,288.8	674.0	128.7	619.1	860.4		2,217.4	2.64
1981			307.0	26.0	657.0	1,387.6	15.0	2,392.7	509.0	78.7	859.3	724.1		2,436.2	2.32
1982			124.6	21.4	571.6	1,144.8	13.6	1,876.4	541.6	52.8	864.1	699.5		2,026.2	1.61
1983			522.8	20.0	622.8	1,103.7	13.0	2,285.3	577.5	306.1	653.7	706.6		1,972.0	1.72
1984			424.5	20.0	608.8	1,573.0	22.0	2,648.4	480.0	311.5	391.8	430.5		1,948.4	4.27
1985[4]	4,407	4,325	303	10	277	601	9	1,199	230	122	78.6	307.6	209.0	907	5.18
1986	3,457	4,367	350	13	290	663	8	1,324	346	42	107.0	362.9	384.4	1,129	3.25
1987	2,886	4,290	494	11	334	748	10	1,597	294	38	440.4	391.3	435.0	1,581	3.65
1988[1]	2,767	3,567	493	12	332	679	15	1,531	433	147	188.9	448.5	340.2	1,641	5.78
1989[2]	2,762	3,595	396	11	272	659	14	1,352	440	122	271.4	390.8	835.7	1,880	5.76
1990[2]	2,830	3,650						1,274	344	122				1,612	3.56
1991[2]								1,300	380	90				1,300	3.10

[1] Preliminary. [2] Estimate. [3] Includes pharmaceuticals. [4] Data prior to 1985 are in thousands of pounds. [5] Metal content. [6] Excludes United States. *Source: Bureau of Mines*

T.36

Broilers

The U.S. broiler industry continued its long-term expansion in 1991, with production of 19.8 billion pounds, a 6 percent rise from the 1990 level. That represented a slower expansion rate than previous years, however, as producers responded to positive, but declining, net returns. Whole broiler prices averaged 51-52 cents/lb. in 1991.

Concentration in the broiler industry has increased over the past several years. The top four firms represented 45 percent of U.S. production in 1991, up from 23 percent in 1980.

U.S. broiler exports were a record 1.18 billion pounds in 1991. Exports to the former Soviet Union were off from 1990's level, due to credit limitations, but shipments to Japan, Hong Kong, and Mexico all rose sharply. The export forecast for 1992 was clouded by the uncertainty about export credits for the Commonwealth of Independent States.

Per capita U.S. broiler consumption was about 74.1 pounds in 1991, a 5.7 percent rise from 1990, with a slightly smaller increase expected in 1992.

Futures Market

Broiler futures and options on futures are traded on the Chicago Mercantile Exchange (CME).

Broiler Supply and Prices in the United States

Year & Quarters	Federally Inspected Slaughter				Total Production RTC[2] (Mil. Lbs.)	Per Capita Consumption (Lbs.)	Prices (Cents/Lb.)	
	Number (Mil.)	Avg. Wt. (Lbs.)	Liveweight Pounds (Mil. Lbs.)	Certified RTC Wt. (Mil. Lbs.)			Farm	City[3]
1987	4,971	4.29	21,333	15,502	15,594	60.2	28.3	47.4
1988	5,159	4.30	22,208	16,124	16,180	62.5	34.0	56.2
1989	5,499	4.34	23,882	17,334	17,428	66.8	36.0	59.0
1989[1] I	1,310	4.35	5,698	4,129	4,150	16.1	36.0	59.5
II	1,394	4.33	6,032	4,389	4,413	16.9	42.0	67.3
III	1,412	4.29	6,052	4,395	4,420	17.0	36.8	59.6
IV	1,383	4.41	6,101	4,420	4,445	16.8	29.4	49.8
1990 I	1,412	4.39	6,201	4,495	4,521	17.0	33.5	56.5
II	1,470	4.36	6,416	4,657	4,685	17.5	34.2	56.6
III	1,483	4.29	6,346	4,613	4,658	17.6	35.1	57.2
IV	1,475	4.45	6,564	4,772	4,800	17.9	28.7	48.8
1991[1] I	1,462	4.43	6,472	4,692	4,719	17.5	30.5	51.3
II	1,560	4.41	6,881	5,004	5,035	18.8	31.0	52.2
III	1,609	4.35	7,001	5,091	5,124	19.2	32.3	54.2
IV	1,501	4.51	6,770	4,920	4,948	18.0	29.9	50.5

[1] Preliminary. [2] Total production equals fed, inspec. slaughter plus other slaughter minus cut-up & further processing condemnation. [3] 12-city weighted average. *Source: Economic Research Service, U.S.D.A.* T.38

Salient Broiler Statistics in the United States

Year	Commercial[2] Production		Average			Total Chickens[2] Supply & Distribution							
						Slaughter						Consumption	
	Number (Millions)	Live weight (Mil. Lbs.)	Live weight Per Bird (Lb.)	Farm Price (¢ Lb.)	Gross Income (Mil. $)	Commercial Broilers	Other Chickens	Total	Storage Stocks Jan. 1	Export & Shipments	Broiler-Feed Ratio in Lbs.	Total	Per Capita (in Lbs.)
						In Millions of Pounds							
1985	4,479	18,851	4.20	30.1	5,680	13,762	636	14,398	139	438	3.0	13,784	58.2
1986	4,646	19,651	4.24	34.5	6,780	14,316	627	14,943	171	583	3.7	14,192	59.4
1987	5,003	21,520	4.29	28.3	6,176	15,597	638	16,235	187	767	3.2	15,287	63.3
1988[1]	5,236	22,455	4.30	34.0	7,432	16,187	633	16,820	213	791	3.1	15,889	65.1
1989[3]	5,500	22,800	4.34	36.0	8,208	17,864	575	18,003	192	838	3.0	17,130	68.9
1990[3]	5,650	23,500	4.35	32.9	7,800	18,680	572	19,252	227	1,159	3.1	18,082	72.1

[1] Preliminary. [2] Ready-to-cook basis. [3] Estimate. *Source: Economic Research Service, U.S.D.A.* T.39

Average Wholesale Broiler[1] Prices RTC In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.	4-Region Ave. Retail	Hens-N.Y.[2] 8-16 Lbs.
1985	52.8	51.9	49.7	47.8	50.9	53.4	50.2	50.1	52.2	48.3	53.7	48.7	50.8	76.3	75.5
1986	51.7	49.0	50.3	50.0	54.6	58.3	69.1	69.7	61.0	61.6	57.5	50.0	56.9	83.5	72.2
1987	51.8	49.8	48.5	48.6	50.5	45.5	47.0	52.6	46.4	43.2	44.6	39.8	47.4	78.5	57.8
1988	43.9	44.9	48.4	48.7	56.6	61.5	66.5	68.9	62.8	57.7	57.1	58.8	56.3	85.4	61.1
1989	58.0	58.0	62.1	63.5	70.4	67.4	62.0	57.3	59.9	51.7	49.2	48.4	59.0	92.7	66.7
1990	51.7	57.4	60.4	55.3	57.9	56.4	59.5	54.9	57.4	48.8	48.0	49.6	54.8	89.9	63.2
1991	51.7	50.6	51.4	52.0	52.0	52.7	54.3	54.6	53.6	51.6	50.3	49.5	52.0	88.0	61.3

[1] Ice packed, ready-to-cook. [2] In retail stores (urban areas), whole or cut-up ready to cook. *Source: Bureau of Labor Statistics* T.37

Butter

During January-September 1991, U.S. milk production ran slightly ahead of the 1990 pace as milk output per cow increased. Milk yields during the first nine months of 1991 averaged 1,255 pounds per month, up marginally from 1,241 pounds in the same period of 1990.

The milk-feed price ratio declined during the first three quarters of 1991; this was expected to discourage dairy producers from increasing feeding rates and was likely to reduce milk production in early 1992. During 1990, the amount of grain and concentrate fed per cow climbed to a near-record 6,400 pounds, almost 9 percent more than in 1989. Over the same period, milk output per cow rose 3 percent to 14,640 pounds. Though the spring and summer of 1991 were hot and dry, rains late in the season were enough to carry the crops. Grain and oilseeds prices were near year-earlier levels, while alfalfa hay prices fell somewhat.

While milk yields per cow were trending higher, the size of the dairy herd was on the decline. In the third quarter of 1991, the herd averaged 9.97 million animals, down from 10.12 million in 1990. Government programs have provided incentives to producers to reduce or eliminate their herds to stem increases in milk production. One effect of these programs has been the elimination of low-yielding cows, which has allowed milk output per cow to increase.

Milk marketings in 1991 were forecast to be 146.6 billion pounds, up very slightly from 1990. The commercial supply of milk was expected to increase 1 percent. During January-August, butter production was nearly 932 million pounds, close to 6 percent higher than in the same period of 1990.

Commercial use of butter in the first half of 1991 was 374 million pounds, compared with 416 million in the same period of 1990. For all of 1990, commercial butter usage was 915 million pounds, up 4 percent. Per capita consumption of butter in 1990 was 4.4 pounds, extending a downtrend which began in 1985.

Commercial butter stocks on September 1, 1991 were 60.7 million pounds, up by over 30 percent from the 1990 level, but down from 1989 stocks of 87 million pounds. More significantly, government stocks on September 1, 1990 rose to 575 million pounds, 49 percent more than on the same date of 1990. Butter stocks as of September 1, 1989 were 357 million pounds. Commodity Credit Corporation (CCC) butter purchases during January-September 1991 were nearly 380 million pounds, up almost 10 percent from 1990. Uncommitted CCC inventories of butter on October 1, 1991 were just over 494 million pounds, against 342 million a year earlier and 191 million two years before.

The wholesale price of Grade A butter in Chicago averaged just over 98 cents per pound for the first nine months of 1991. For 1990 as a whole, Grade A butter prices averaged 102 cents; in 1989 they were 128 cents.

One issue facing the dairy market in 1992 was the question of food aid and export credits for the Soviet Commonwealth. The Soviets in 1991 requested large amounts of aid, mostly in the form of food and including dairy products. Butter stocks have reached burdensome levels in the U.S. and are an obvious choice for donations. The Soviets demonstrated a need for imported butter by purchasing 300,000 tonnes from the European Community and New Zealand.

U.S. exports of dairy products have fallen sharply, partly because of a decline in exports of butter.

Supply and Distribution of Butter in the United States In Millions of Pounds

	Supply				Distribution: Domestic Disappearance					Dept. of Agr.				93 Score Wholesale Prices	
Year	Production	Cold Storage Stocks[1] Jan. 1[2]	Imports	Total Supply	Total	Donated	Per Capita —Lbs.—	Exports	Shipments[4]	Jan. 1 Stocks[5]	Dec. 31 Stocks[5]	Removed by U.S.D.A. Programs	Total Use	Calif. AA $ Lb.	Chi. AA $ Lb.
1987	1,104	252	5	1,361	1,132	231	4.6	81	1	220	96	187.3	1,214	1.6748	1.4172
1988	1,207	147	5	1,359	1,102	195	4.5	41	1	96	173	312.6	1,144	1.6097	1.3412
1989	1,295	215	5	1,515	1,077	214	4.4	159	4	173	223	413.4	1,240	1.5660	1.2951
1990[3]	1,302	275	5	1.582	1,093	182	4.4	68	4	223	373	400.3	1,165		
1991[6]	1,250	417	5							373					

[1] Includes butter-equivalent of butteroil. [2] Includes stocks held by U.S.D.A. [3] Preliminary. [4] Includes U.S.D.A. shipments to Territories. [5] Includes butteroil. [6] Estimate. *Source: Department of Agriculture* T.43

Commercial Disappearance of Creamery Butter in the U.S. In Millions of Pounds

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1983	209.5	198.6	217.0	256.6	881.7	1988	194.5	221.6	219.7	274.0	909.8
1984	194.0	241.3	215.6	251.9	902.7	1989	188.3	145.6	228.8	291.3	854.1
1985	200.0	203.9	241.5	272.9	918.2	1990[1]	197.5	218.1	218.1	281.3	915.2
1986	198.6	220.1	234.4	269.8	922.9	1991[1]	174.5	200.4	260.6		
1987	222.7	222.1	218.4	239.3	902.5						

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.46

World (Total) Butter[1] Production In Thousands of Metric Tons

Year	Australia	Brazil	Canada	Germany	Czechoslovakia	Argentina	Denmark	France	Ireland	W. Germany	Netherlands	N. Zealand	India	Poland	Sweden	USSR	South Africa	United Kingdom	United States
1982	76	70	134	266	138	37	121	624	140	556	216	248	650	265	70	1,403	17	216	570
1983	88	70	118	291	149	34	131	637	164	627	271	252	670	300	73	1,562	19	240	589
1984	111	70	119	309	152	29	104	621	171	572	241	287	690	322	77	1,588	18	205	500
1985	114	70	108	316	150	32	110	595	163	515	306	293	700	308	74	1,596	17	202	566
1986	105	65	109	320	156	32	112	633	160	567	377	299	720	289	66	1,700	15	222	545
1987	104	65	95	786	149	34	96	569	150		234	248	750	293	64	1,742	11	174	501
1988	98	65	105	700	148	35	94	521	139		214	276	850	293	61	1,724	15	140	547
1989[2]	96	65	99	665	156	45	92	518	156		213	246	880	325	70	1,726	16	130	588
1990[2]	111	75	97	640	159	40	93	527	149		209	276	970	315	76	1,730	21	130	591
1991[2]	114	70	100	533	150	38	72	500	146		198	269	1,040	285	65	1,600	18	120	620
1992[3]	111	75	100	530	145	40	70	500	138		175	267	1,020	300	60	1,550	18	125	560

[1] Factory (including creameries and dairies) & farm. [2] Preliminary. [3] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.44

Production of Creamery Butter in Factories in the United States In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	127.3	115.9	123.4	334.0			256.4			300.0			1,257
1983	139.1	119.2	123.6	124.0	120.7	103.7	91.4	84.6	84.7	100.5	98.1	109.6	1,299
1984	127.3	108.9	107.6	103.0	105.1	81.8	72.7	70.2	67.5	84.4	79.8	95.1	1,103
1985	116.8	104.6	105.9	111.4	112.9	95.6	92.4	92.1	92.1	109.3	99.4	115.4	1,248
1986	136.7	119.3	119.2	122.7	114.7	93.0	79.7	69.9	80.2	85.3	80.3	101.3	1,202
1987	111.9	97.4	105.4	102.6	98.2	81.5	75.2	66.4	77.9	91.2	87.9	108.5	1,104
1988	126.1	119.7	115.5	113.8	108.0	90.8	76.3	74.1	83.3	92.3	95.6	112.0	1,208
1989	129.0	124.7	135.7	124.7	122.5	95.3	72.2	80.1	81.6	95.1	94.4	107.4	1,274
1990	134.0	127.3	136.2	125.6	118.6	96.7	84.6	84.2	83.4	106.7	110.1	112.2	1,302
1991[1]	142.1	126.3	131.6	133.7	126.0								

[1] Preliminary. [2] Estimate. *Source: Crop Reporting Board, U.S.D.A.* T.45

Cold Storage Holdings of Creamery Butter in the U.S., on First of Month In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	429.2	430.3	440.4	447.8	—	—	541.6	—	—	510.0	—	—
1983	466.8	485.4	522.0	529.0	555.7	576.1	589.6	588.4	581.8	552.3	523.9	506.7
1984	499.4	510.6	532.5	529.3	532.4	538.5	516.7	489.6	462.7	426.3	374.3	335.9
1985	296.6	277.3	289.4	291.7	272.7	283.2	286.8	280.7	264.6	247.0	231.6	206.9
1986	205.5	206.3	242.4	283.3	305.0	330.8	342.8	337.6	304.4	279.6	253.3	218.5
1987	193.0	206.6	231.6	254.0	247.9	251.1	237.9	211.2	187.3	176.2	165.6	158.5
1988	143.2	157.3	198.9	221.1	240.4	280.5	293.4	295.8	294.4	253.4	237.3	226.2
1989	214.7	246.6	314.4	341.9	377.2	438.3	464.1	461.3	439.7	407.9	370.6	294.1
1990	256.2	269.7	293.8	335.4	358.8	399.6	420.0	420.8	427.9	412.3	413.6	407.6
1991[1]	416.1	470.8	524.8	555.9	619.8	642.3						

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.47

Wholesale Price of 92 Score Creamery (Grade A) Butter at Chicago In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	147.5	147.5	147.8	147.4	147.3	147.3	147.6	148.1	148.4	147.4	148.2	147.9	147.7
1983	147.3	147.3	147.3	147.3	147.3	147.3	147.8	151.0	147.6	147.3	143.1	143.1	147.3
1984	140.4	141.3	142.1	142.9	142.9	150.0	155.6	150.6	158.1	158.1	158.1	145.6	148.8
1985	141.5	141.3	141.3	141.9	141.9	141.9	141.5	140.7	141.2	141.6	139.5	139.1	141.1
1986	138.8	138.8	137.5	138.8	138.8	139.1	143.7	153.9	154.2	153.5	151.9	145.5	144.5
1987	137.3	136.8	137.8	138.8	138.4	144.6	149.0	148.1	145.3	136.8	135.6	134.0	140.2
1988	131.9	131.0	131.0	131.0	131.0	133.5	135.9	135.6	134.3	132.0	131.3	131.3	132.5
1989	131.0	131.0	131.0	131.0	131.0	131.0	130.3	132.8	125.1	120.5	120.5	120.0	127.9
1990	110.9	108.3	108.3	106.9	99.0	98.4	100.3	98.9	98.9	98.9	98.9	98.0	102.1
1991	97.3	97.3	97.3	97.3	97.3	98.6	98.9	98.9	100.7				

Source: Economic Research Service, U.S.D.A T.48

Cadmium

Cadmium metal prices found a much-needed respite in 1991 from the previous year's spectacular bear market. Settling in at around $1.50 a pound in 1991, cadmium metal prices were expected to be steady during 1992, as demand from the battery sector stabilized and falling consumption in pigments for engineering plastics and coatings bottomed.

Since cadmium is highly toxic, its disposal, especially cadmium used in nickel cadmium batteries, is problematic. However, with concerns about hydrocarbon-powered vehicles, there was great promise for battery-powered cars and trucks using nickel-cadmium batteries.

After a period of stock drawdowns during 1990, U.S. cadmium stocks increased during first-half 1991. At the end of 1991's second quarter, cadmium stocks held by metal producers totaled 311 tonnes, compared with end-1990's 241 tonnes. Compound producer stocks in the same period totaled 114 tonnes, versus 1990's end-year 77 tonnes.

Domestic production of cadmium metal and cadmium compounds increased considerably in 1991's second quarter to 465 tonnes and 319 tonnes, respectively, over the first quarter's production of 312 tonnes and 255 tonnes.

Full-year 1990 cadmium metal production totaled 1,678 tonnes, versus 777 tonnes for the first six months of 1991.

In 1990, the U.S. imported 1,741 tonnes of cadmium metal, compared with imports of 990 tonnes for the first five months of 1991. Canada was the largest supplier with 743 tonnes in 1990 and 439 tonnes for the Jan.-May 1991 period. Mexico was next, with 345 tonnes for all of 1990 and 123 tonnes in 1991's first five months.

Cadmium is included in the National Defense Stockpile (NDS) because of its importance in specialized applications, such as plating, where substitutes may be in short supply or unsatisfactory. In 1980, the NDS goal for cadmium was set at 5,307 tonnes, and at 1990's end the total stood at 2,871.

World Refinery Production of Cadmium In Metric Tons

Year	Australia	Belgium	Canada	China	Finland	France	W. Germany	Italy	Japan	Mexico	Norway	Poland	Un. King.	USSR	United States[3]	Zaire	World Total
1978	747	1,164	1,265		611	694	1,182	378	2,531	897	120	761	291	2,800	1,653	186	17,310
1979	804	1,440	1,455		590	689	1,266	527	2,597	830	115	773	424	2,850	1,823	212	18,679
1980	1,012	1,524	1,303	250	581	789	1,194	568	2,173	778	130	698	375	2,850	1,578	168	18,238
1981	1,031	1,176	1,298	270	621	663	1,192	489	1,977	590	117	580	278	2,900	1,603	230	17,381
1982	1,010	996	854	300	566	793	1,030	475	2,034	607	104	570	354	2,900	1,007	280	16,387
1983	1,121	1,260	1,456	300	616	513	1,094	385	2,214	847	117	570	340	3,000	1,052	308	17,636
1984	1,082	1,472	1,605	300	614	568	1,111	452	2,423	838	150	570	390	3,000	1,686	318	19,463
1985	910	1,252	1,717	540	565	337	1,095	526	2,535	734	159	600	370	3,000	1,603	296	18,924
1986	915	1,374	1,484	650	522	431	1,218	411	2,489	1,016	154	600	379	3,000	1,486	364	19,070
1987	944	1,308	1,481	680	690	457	1,125	320	2,450	935	147	600	498	3,000	1,515	299	19,066
1988	855	1,836	1,742	750	703	558	1,159	705	2,614	1,259	169	600	399	3,000	1,885	281	21,899
1989	900	1,790	1,750	800	600	500	1,190	500	2,690	1,200	200	600	395	3,000	1,550	270	21,002
1990[1]	640	1,956	1,437						2,380	1,414					1,678		20,100
1991[2]	700	2,000	1,500						2,500	1,200					1,600		20,300

[1] Preliminary. [2] Estimate. [3] Primary & secondary metal. *Source: Bureau of Mines* T.49

Salient Statistics of Cadmium in the United States In Metric Tons of Contained Cadmium

Year	Net Import Reliance as a % of Apparent Consumption	Production					Imports[3] of Cadmium Metal				N.Y. Dealers Price[5] $ per lb.	Exports		Consumption[4]	Stocks, Dec. 31			
		Primary	– Producers –				From:					Cadmium Metal, Alloys, Dross,			Industry			
		Metallic	Shipments	Value Mil. $	Cadmium Sulfide	Other Compounds	Australia	Canada	Mexico	Total		Flue Dust	Value Ths. $		Metallic	Compounds	Distributors	In Compounds
1978	63	1,653	1,957	5.9	698					2,881	2.45	326	864	4,510	1,152	45	296	
1979	64	1,823	2,468	9.5	813					2,572	2.76	211	550	5,099	517	52	327	
1980	55	1,578	1,271	5.2	801					2,617	2.84	236	464	3,534	841	42	439	
1981	63	1,603	1,382	3.8	527					3,090	1.93	239	332	4,378	1,077	68	215	
1982	73	1,007	1,832	2.6	374	971	446	375	171	2,305	1.11	11	126	3,728	635	167	150	
1983	72	1,052	1,495	1.8	670	1,024	713	938	126	2,196	1.13	170	351	3,763	209	49	91	
1984	51	1,686	1,811	2.6	771	1,510	363	862	174	1,889	1.32	106	208	3,300	208	59	52	
1985	57	1,603	1,791	2.4	477	1,021	483	1,044	162	1,988	.92	86	342	3,720	136	111	59	380
1986	66	1,486	2,030	1.9	645	1,459	589	1,221	441	3,174	1.07	38	188	4,385	303	73	65	482
1987	64	1,515	1,916	1.9	540	1,511	427	1,164	496	2,701	1.60	241	660	4,178	126	98	37	459
1988	48	1,885	2,074	5.4	345	1,497	31	858	590	2,482	6.91	613	3,697	3,621	332	128	21	373
1989	62	1,550	2,015	2.3	267	1,451	—	947	616	2,787	6.28	369	857	4,096	241	77	8	400
1990[1]	46	1,678								1,741	3.38	400		3,107	653			
1991[2]	54	1,600								2,300	2.05			3,500	750			

[1] Estimate. [2] Preliminary. [3] For consumption. [4] Apparent Primary cadmium in all forms. [5] Sticks & Balls in 1 to 5 short ton lots.
Source: Bureau of Mines T.50

Cassava

Cassava, or tapioca root, is used as an animal feed and in tropical countries as a foodstuff. The three major producers are Thailand, Nigeria, and Brazil, each harvesting between 20 and 25 million tonnes a year. Indonesia and Zaire are also large growers. The world crop is generally just under 160 million tonnes annually. Thai tapioca root production in 1991/92 (Oct.-Sept.) was put at 21.7 million tonnes, higher than 20.9 million the previous year, but down from the record 24.6 million in 1988/89, according to the Thai Tapioca Trade Association.

World trade in tapioca is 10 million to 12 million tonnes annually, and Thailand is the leading exporter, with Indonesia a distant second. In the first ten months of 1991, Thailand exported 5.18 million tonnes of tapioca, against 6.45 million in the corresponding year-earlier period. The EC is the world's major importer and Thailand's chief customer. Tapioca is used as an ingredient in animal feed in Europe.

Thai shipments to the EC in the first ten months of 1991 were running slightly ahead of the year-earlier pace, but sales to the Soviets were off sharply and shipments to China were lower. Thailand was allowed to ship a maximum of 5.75 million tonnes of tapioca a year to the EC during 1991 to 1994 under a Thai-EC restraint agreement. Indonesia's tapioca exports were running much lower in 1991 than the year before.

In the first several months of 1991, prices of cassava pellets, CIF Rotterdam, were strong and reached $187 per tonne, up from an average $167 in 1990. This represented a good recovery from the fairly depressed level of $144 in 1989. Cassava/soymeal mixture (80 percent cassava, 20 percent soy), CIF Rotterdam, rose to $197 a tonne in early 1991 from an average $183 in 1990.

World Cassava Production In Millions of Tons

Year	Brazil	China	Colombia	Ghana	India	Indonesia	Madagascar	Mozambique	Nigeria	Paraguay	Philippines	Tanzania	Thailand	Uganda	Viet-Nam	Zaire	World
1988	21.7	3.3	1.3	2.8	5.4	15.5	2.2	3.2	20.0	3.9	1.8	6.1	22.3	2.5	2.8	16.2	146.2
1989	23.6	3.2	1.5	3.3	4.5	17.1	2.2	3.5	25.0	4.0	1.8	6.2	24.3	3.1	2.6	16.4	157.7
1990[2]	24.6	3.2	1.8	3.0	4.5	15.9	2.3	4.1	26.0	4.0	1.9	5.5	22.8	3.2	3.0	17.0	158.1

[1] Estimate. *Source: Food and Agriculture Organization of the United Nations*

Prices of Cassava Soybean Meal and Barley in the EEC U.S. Dollars Per Ton

Year	Cassava[1] Pellets	Cassava Soybean Meal Mixture[2]	Barley[3]
1987	149	167	200
1988	154	184	197
1989	144	172	175
1990	167	183	194
1991	187	197	

[1] Prices CIF Rotterdam. [2] Mixture 80% cassava, 20% soybean meal. Includes 6% levy on cassava pellets. [3] Selling price of barley in Germany. *Source: Food and Agriculture Organization of the United Nations*

World Trade in Cassava In Thousands of Tons

	Exports					Imports						
Year	China	Indonesia	Thailand	Viet Nam	Total World Exports	China	EEC[2]	Japan	Korea Rep. of	U.S.	USSR	Total World Imports
1988	320	1,086	8,580	20	10,050	500	7,025	600	400	75	988	10,440
1989	260	1,150	10,340	150	11,940	910	6,982	650	930	260	861	11,900
1990[1]	180	1,200	1,775	30	10,310	1,000	5,865	500	900	240	800	10,300

[1] Estimate. [2] Excluding trade between the twelve EEC members. *Source: Food and Agriculture Organization of the United Nations*

Castor Beans

Worldwide production of castorseed was forecast to fall to 1.118 million tonnes in the 1991/92 season from 1.312 million a year earlier, according to *Oil World*, the German statistical publication. Castorseed accounts for less than 1 percent of world oilseed output.

Global crushings of castorseed during October 1991 to September 1992 were projected at 1.10 million tonnes, near 1.12 million in the previous season and above 960,000 tonnes in 1989/90. The leading crushers are India, China, and Brazil.

As for castor oil, world production in 1991/92 was projected to be 460,000 tonnes, compared with 470,000 in 1990/91 and 400,000 in 1989/90. India's output was pegged at 221,000 tonnes, down marginally from the previous season, while China's production was placed at 87,000 tonnes, lagging 98,000 the year before.

India was expected to export 150,000 tonnes of castor oil during the marketing year.

The average price of castor oil, ex-tank Rotterdam, fell to $792 a tonne in 1990/91 (Oct.-Sept.) from $1,062 the year before as world supplies were more than ample.

World Production of Castorseed Beans In Thousands of Metric Tons

Crop Year	China	Brazil	Ecuador	Ethiopia	India	Romania	Paraguay	Israel	Mexico	Pakistan	Thailand	USSR	Philippines	Sudan	World Total
1985–6	280	418	6	1	308	6	38		4	22	33	62	12	1	1,218
1986–7[1]	235	263	5	1	230	8	39		4	21	36	68	7	1	949
1987–8[2]	330	104	6	1	195	8	44		4	20	29	66	8	2	844
1988–9[2]	260	146	6		417		49		4	14	23	60			1,034
1989–90[2]	270	128			500		45		4	13	24	43			1,086
1990–1[2]	290	163			700				4			36			1,334

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.; "The Oil World."* T.51

Castor Oil Consumption[1] in the United States In Thousands of Pounds

Crop Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1985–6[2]	4,807	3,614	3,840	2,833	5,016	4,935	4,528	5,282	5,602	7,054	6,084	6,111	59,706
1986–7[2]	6,982	5,569	4,743	5,754	5,867	6,251	5,939	6,749	6,984	4,964	3,357	7,078	70,237
1987–8[2]	7,254	7,115	6,943	5,240	6,529	6,984	5,353	6,307	5,457	4,823	7,054	5,466	72,525
1988–9[2]	5,720	6,565	5,018	5,539	4,665	5,424	5,062	4,827	4,914	3,155	5,680	2,644	59,213
1989–90[2]	4,325	4,570	3,568	4,268	4,487	4,724	4,385	4,436	4,092	3,847	5,156	3,833	51,691
1990–1[2]	3,334	2,815	3,507	11,787			12,991						

[1] In inedible products (Resins, Plastics, etc.). [2] Preliminary. *Source: Bureau of the Census.* T.52a

Castor Oil Stocks in the United States In Thousands of Pounds

Crop Year	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1
1985–6[1]	14,632	17,087	28,477	21,031	24,754	25,586	26,263	19,739	30,125	24,740	29,809	26,919
1986–7[1]	22,212	26,907	31,876	29,376	35,042	30,039	39,369	30,616	40,460	40,821	43,204	41,246
1987–8[1]	33,738	36,060	31,757	48,027	43,191	37,297	47,945	41,480	37,969	32,051	26,885	16,472
1988–9[1]	9,614	13,826	15,402	14,448	6,738	9,620	13,256	10,794	13,257	13,934	12,898	10,201
1989–90[1]	9,556	11,869	10,486	N.A.	N.A.	13,708	11,852	17,948	21,101	32,992	25,295	26,793
1990–1[1]	18,819	18,118	25,245	25,071	—	—	17,046	—	27,669	—		

[1] Preliminary. *Source: Bureau of the Census.* T.52b

Monthly Average Wholesale Prices of Castor Oil No. 1, Brazilian Tanks at New York In ¢ per Lb.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	65.00	65.00	65.00	65.00	65.00	36.00	36.00	36.00	36.00	36.00	36.00	34.00	47.92
1986	34.50	34.50	34.50	34.50	33.38	32.25	32.38	32.56	31.70	31.63	32.00	33.00	33.08
1987	32.80	32.25	34.27	36.00	36.00	36.00	42.50	42.50	43.10	44.00	44.00	46.50	39.16
1988	46.50	46.50	52.50	51.38	49.88	49.50	48.75	48.00	48.00	48.00	48.50	49.00	48.88
1989	51.00	51.75	51.90	51.50	51.50	51.50	51.50	51.50	51.50	51.50	51.50	51.50	51.51
1990	54.50	53.50	52.60	52.00	51.20	51.00	51.00	51.00	45.00	43.40	39.63	39.63	48.70
1991	39.30	36.00	36.75	37.00	37.00	36.50							

Source: Foreign Agricultural Service, U.S.D.A. T.53

Cattle and Calves

Fed cattle prices trended lower through much of the first half of 1991 from the record highs of over $80 a hundredweight in the winter of 1990/91. By mid-1991, prices had fallen to the mid-$60s per hundredweight, before stabilizing and setting the stage for a recovery to the low $70s by late 1991. Any further price strength in 1992 was expected to be minimal, owing to a combination of: 1.) record supplies of competing meats, 2.) the continued marketing of heavy-weight fed cattle, and 3.) the sluggish U.S. economy and its negative effect on consumer spending. U.S. retail choice beef prices averaged about $2.90 a pound in 1991, with a slight dip expected in 1992.

U.S. cattle statistics were mixed in 1991. Feedlot placements fell about 8 percent from the 25 million head placed in 1990. But marketings off feed of 22.3 million were only about 1 percent less, while slaughter weights reached record highs, averaging 781 pounds, carcass weight, in September, 20 pounds heavier than a year earlier and 58 pounds above the 1980-89 average. Moreover, the record carcass weights did not reflect isolated months of overfinishing. On the contrary, as long as fed prices averaged over $70 a cwt., feedlot producers were likely to have the incentive to market larger framed cattle at heavier weights. This was expected to occur in 1992, while placements on their own were likely to increase about 5 percent from 1991's low level.

Ironically, fed cattle were often marketed in mid-1991 at losses exceeding $100-$150 a head, reducing feedlot operators' incentives to place cattle, as they were unable to bid stocker cattle away from forage-based enterprises that had ample forage and offered a lower alternative cost to weight gain. Still, once placed, feedlots then had the incentive to add extra pounds to their cattle before marketing, owing to the high price of replacement cattle and attractive feed costs. This overall placement/marketing setting was unlikely to change much in 1992.

Also, the expected gains in U.S. beef production were not anticipated to trigger any gains in consumption, partly because of changing dietary propensities that do not favor red meat use, notwithstanding continued aggressive advertising by the beef industry.

The increase in animal weights filtered down to calves, with commercial calf carcass slaughter weights averaging about 205 pounds a head in 1991, 16 percent higher than in 1990. Commercial calf slaughter for the year fell 22 percent to 1.4 million head with a record third-quarter low of 341,000 head, versus 430,000 in the like 1990 period. For 1992, another drop in calf slaughter was expected, probably no more than 10 percent from 1991's total, but with little change in calf dressed weights as the industry continued to focus on realizing a greater proportion of heavier, higher-valued, formula-fed veal calves.

U.S. beef imports rose in 1991 from 1990's 2.4 billion pounds. Australia and New Zealand were the major sources of imported beef, accounting for about 75 percent of the total. Indeed, about 75 percent of New Zealand's beef is exported, and most of it goes to the U.S. Canada and Argentina vie for third- and fourth-place suppliers of beef to the U.S. These two nations are basically excluded from the U.S. Meat Import Law, which applies mostly to Australia and New Zealand. In 1991, the trigger level under the import law was 1,318.5 million pounds, product weight, down 3.5 percent from 1990. The U.S. also imports live cattle from Canada and Mexico, and the latter nation is generally the larger supplier, providing over 1 million head.

The U.S. exports a small number of cattle, mostly to Canada and Mexico, and the combined total is generally under 250,000 head. U.S. beef exports go mostly to Japan, but demand from other nations, particularly South Korea, Mexico and Canada, is increasing. Total U.S. beef and veal exports in 1991 of about 1.1 billion pounds were up 14 percent from 1990 and were expected to gain another 8 percent in 1992.

Futures Markets

Live cattle futures and options are traded on the Chicago Mercantile Exchange and the MidAmerica Exchange. Feeder cattle futures and options are also traded on the CME.

World Cattle and Buffalo Numbers as of January 1 In Millions of Head

Year	Argentina	Australia	Brazil	Canada	China	Colombia	France	Germany	India	Poland	Turkey	Mexico	South Africa	USSR	Un. Kingdom	United States	World Total
1984	54.4	22.2	93.3	11.6	78.1	21.7	23.5	15.6	267.5	11.1	16.0	33.9	12.1	119.6	13.1	113.7	1,033
1985	54.7	22.8	94.7	11.3	82.6	21.2	23.1	15.7	271.4	10.9	15.5	33.9	12.0	121.1	13.0	109.7	1,041
1986	53.5	23.4	95.2	11.0	86.8	19.9	22.8	15.6	275.3	10.8	15.0	32.2	11.8	120.9	12.7	105.5	1,039
1987	51.7	23.5	128.0	10.8	91.7	18.8	22.2	21.1	274.8	10.5	14.5	33.6	12.0	122.1	12.5	102.1	1,073
1988	50.8	23.5	130.0	10.9	94.7	18.4	21.1	20.6	265.1	10.2	14.0	35.4	12.2	120.6	11.8	99.6	1,061
1989	50.8	23.9	130.5	11.0	98.0	17.6	20.1	20.4	267.6	10.3	13.4	35.0	12.7	119.6	11.9	98.0	1,063
1990	50.6	24.2	130.9	11.2	100.8	16.8	20.3	20.3	270.2	10.1	12.7	31.7	13.4	118.4	11.9	98.2	1,062
1991[2]	50.8	24.3	131.3	11.2	105.0	16.2	19.5	19.5	272.7	9.0	12.0	30.0	13.5	115.7	11.8	99.4	1,062
1992[1]	50.1	24.8	130.7	11.4	108.5	16.1	18.1	18.1	271.4	8.6	11.7	30.0	13.6	112.0	11.8	102.7	1,061

[1] Forecast. [2] Preliminary. *Source: Foreign Agricultural Service, U.S.D.A.* T.54

CATTLE AND CALVES

Cattle Supply and Distribution in the United States In Thousands of Head

Year	Cattle & Calves on Farms Jan. 1	Imports	Calves Born	Total Supply	Livestock Slaughter—Cattle and Calves: Commercial: Federally Inspected	Other[2]	All Commercial	Farm	Total Slaughter	Deaths on Farms	Exports	Total Disappearance
1983	115,001	921	43,885	159,807	37,614	2,112	39,726	410	40,136	5,494	56	45,686
1984	113,360	753	42,470	156,583	38,910	1,969	40,879	388	41,259	5,464	71	46,794
1985	109,582	836	41,050	151,468	37,933	1,745	39,678	370	40,048	5,046	125	45,219
1986	105,378	1,407	41,182	147,967	39,108	1,588	40,696	351	41,046	4,998	108	46,152
1987	102,118	1,200	40,152	143,470	37,147	1,315	38,462	330	38,792	4,800	131	43,723
1988	99,622	1,332	40,588	141,247	36,459	1,124	37,585	286	37,880	4,657	321	42,858
1989	98,065	1,459	40,142	139,626	35,110	979	36,089	287	36,329	4,452	169	40,950
1990[1]	98,162	2,135	39,249	139,546	34,133				35,277	4,425	120	39,822
1991[3]	98,896	1,939	39,256	140,091	33,226				34,375	4,400	311	39,086
1992[3]	100,110											

[1] Preliminary. [2] Wholesale and retail. [3] Forecast. *Source: Economic Research Service, U.S.D.A.* T.56

United States Beef Supply and Utilization

Year	Commercial production	Farm production	Beginning stocks	Imports	Total supply	Exports	Shipments	Military purchases	Ending stocks	Total disappearance	Per capita disappearance	Retail weight per capita	Civilian Population
	Million Pounds										*Pounds*		*Million*
1987 I	5,754	56	412	543	6,764	127	14	32	411	6,213	25.6	18.1	240.8
II	5,737	25	411	627	6,800	136	13	23	337	6,315	25.9	18.4	241.4
III	6,084	24	337	681	7,106	159	14		381	6,552	26.8	19.0	242.0
IV	5,850	56	381	418	6,705	183	12		386	6,125	25.0	17.8	242.6
Year	23,405	161	412	2,269	26,247	604	52	104	386	25,205	103.3	73.4	241.7
1988 I	5,700	58	386	703	6,847	134	16		419	6,294	25.6	18.0	243.2
II	5,784	25	419	668	6,896	155	15		332	6,409	26.1	18.4	243.8
III	6,185	24	332	585	7,126	188	15		409	6,529	26.5	18.7	244.5
IV	5,755	58	409	423	6,645	203	15		422	6,020	24.3	17.2	245.1
Year	23,424	165	386	2,379	26,354	680	61		422	25,252	102.5	72.3	244.1
1989 I	5,530	40	422	566	6,558	227	15		398	5,933	23.9	16.9	245.7
II	5,777	17	397	533	6,725	265			322	6,138	24.7	17.4	246.2
III	5,893	16	322	524	6,755	267			307	6,181	24.8	17.5	246.9
IV	5,774	40	307	552	6,673	264			335	6,074	24.3	17.1	247.6
Year	22,974	113	422	2,175	25,684	1,023			335	24,326	97.8	68.9	246.6
1990[1] I	5,508	38	335	598	6,479	232			403	5,844	23.5	16.6	248.2
II	5,736	16	403	573	6,728	237			340	6,151	24.6	17.4	248.8
III	5,823	16	340	597	6,776	270			321	6,185	24.7	17.4	249.2
IV	5,567	39	321	588	6,515	267			397	5,851	23.3	16.4	250.4
1991[2] I	5,383	38	397	570	6,388	281			366	5,741	22.8	16.1	
II	5,694	16	366	682	6,758	289			327	6,142	24.4	17.2	
III	6,012	16	327	630	6,985	300			368	6,317	25.0	17.6	
IV													

[1] Preliminary. [2] Forecast. *Source: Economic Research Service, U.S.D.A.* T.56b

U.S. Cattle on Feed in 13 States, Quarterly In Thousands of Head

Year	Number on Feed[1]	Placed on Feed	Marketings	Other Disappearance	Year	Number on Feed[1]	Placed on Feed	Marketings	Other Disappearance
1988	10,114	24,423	23,459	1,390	1990[2]	9,943			
I	10,114	5,824	5,853	390	I	9,943	6,083	5,583	385
II	9,695	5,913	5,879	423	II	10,063	5,086	6,013	400
III	9,306	6,031	6,261	225	III	8,761	6,333	5,741	261
IV	8,851	6,655	5,466	352	IV	9,092	7,486	5,495	347
1989	9,688	24,484	22,955	1,274	1991[2]	10,977			
I	9,688	6,232	5,658	344	I	10,977	5,692	5,338	462
II	9,918	5,212	6,040	410	II	10,869	4,890	5,869	464
III	8,680	5,719	5,896	227	III	9,426	5,364	5,968	282
IV	8,276	7,306	5,346	293	IV	8,540		5,155	

[1] Beginning of period. [2] Preliminary. *Source: Economic Research Service, U.S.D.A.*

U.S. Cattle on Feed in 7 States In Thousands of Head

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1984	8,006	7,917	7,515	7,568	7,376	7,318	7,125	6,811	6,747	7,442	8,221	8,544
1985	8,635	8,169	7,877	7,814	7,495	7,444	7,057	6,404	6,155	6,461	7,582	7,892
1986	7,920	7,664	7,322	7,293	7,107	7,096	6,543	6,331	6,404	6,811	7,546	7,826
1987	7,643	7,953	7,614	7,473	7,527	7,548	7,875	7,488	6,983	7,098	7,830	8,659
1988	8,752	8,411	8,204	7,912	8,056	7,829	8,134	7,736	7,140	6,944	7,404	8,194
1989	8,255	8,045	7,970	7,931	8,252	8,087	7,795	7,235	6,763	6,631	6,958	7,911
1990	8,331	8,378	8,526	8,319	8,483	8,181	7,867	7,310	7,003	6,990	7,670	8,729
1991[1]	9,129	9,137	9,103	8,974	9,056	8,675	8,585	7,847	7,348	7,009	7,156	

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.54a

U.S. Cattle Placed on Feedlots in 7 States In Thousands of Head

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	1,566	1,301	1,764	1,515	1,798	1,445	1,323	1,680	2,265	2,546	1,945	1,624	20,772
1985	1,449	1,342	1,594	1,417	1,666	1,267	1,078	1,510	1,988	2,779	1,776	1,540	19,346
1986	1,581	1,220	1,650	1,565	1,756	1,162	1,544	1,802	2,103	2,403	1,814	1,435	20,035
1987	1,591	1,442	1,719	1,681	1,984	1,422	1,274	1,915	2,429	2,604	1,609	1,340	21,040
1988	1,660	1,379	1,848	1,521	2,165	1,377	1,246	1,660	2,169	2,475	1,680	1,421	20,654
1989	1,706	1,610	2,065	1,539	1,624	1,293	1,291	1,638	1,953	2,652	2,001	1,552	20,834
1990	1,896	1,403	1,902	1,377	1,632	1,335	1,520	1,735	2,214	2,751	2,007	1,478	21,215
1991[1]	1,716	1,425	1,718	1,402	1,717	1,077	1,317	1,439	1,821				

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.54b

U.S. Cattle Marketings in 7 States In Thousands of Head

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	1,569	1,621	1,594	1,523	1,637	1,544	1,553	1,683	1,489	1,657	1,501	1,414	18,785
1985	1,782	1,540	1,559	1,603	1,589	1,572	1,670	1,670	1,603	1,573	1,380	1,401	18,989
1986	1,750	1,470	1,593	1,631	1,635	1,648	1,692	1,659	1,637	1,587	1,447	1,514	19,263
1987	1,793	1,478	1,571	1,541	1,514	1,732	1,723	1,732	1,671	1,700	1,478	1,612	19,545
1988	1,764	1,545	1,593	1,609	1,724	1,717	1,785	1,790	1,682	1,576	1,517	1,516	19,918
1989[1]	1,677	1,534	1,579	1,580	1,752	1,791	1,700	1,694	1,579	1,628	1,490	1,418	19,422
1990[1]	1,634	1,500	1,618	1,554	1,776	1,819	1,750	1,666	1,445	1,605	1,512	1,349	19,238
1991[1]	1,632	1,441	1,499	1,655	1,666	1,701	1,724	1,711	1,598				

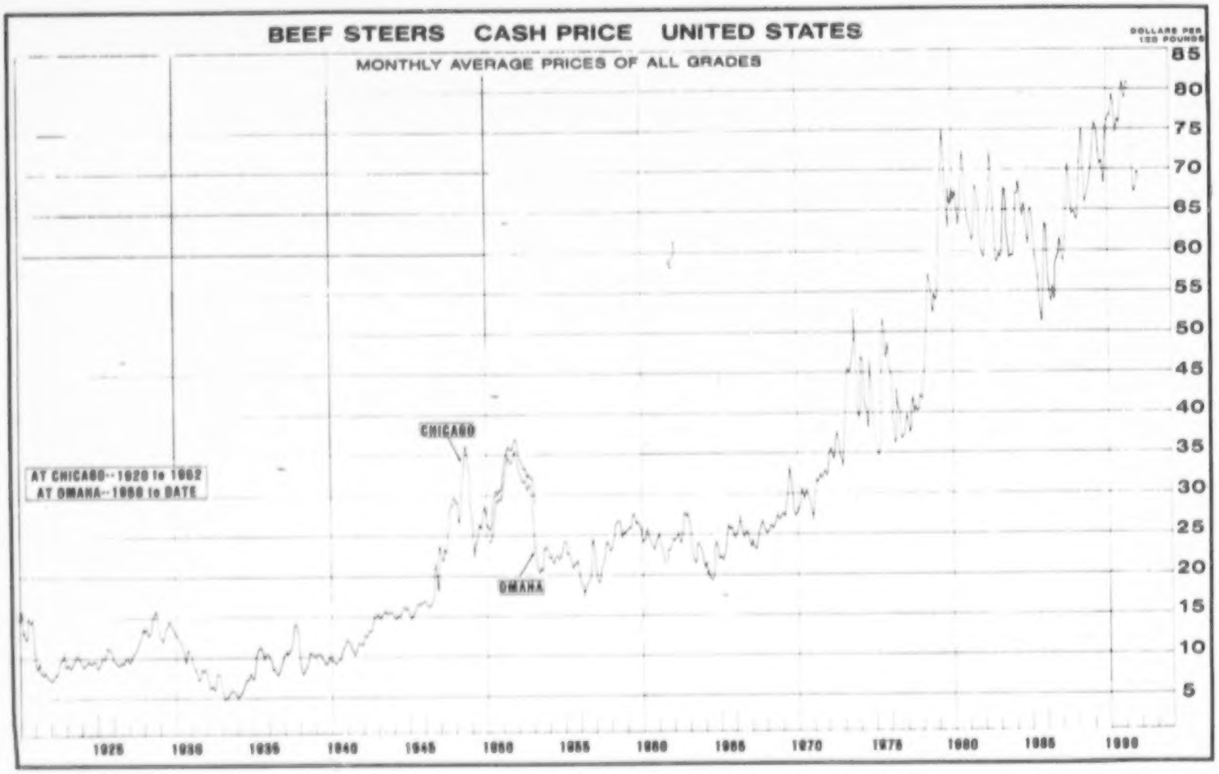
[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.54c

Condition[1] of Pasture and Range Feed in the United States, on First of Month In Percent of Normal

Year	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Year	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1
1984	75	79	80	75	70	66	74	1988	73	68	46	51	54	60	59
1985	83	81	77	70	75	76	79	1989	68	74	77	73	72	74	69
1986	76	80	83	76	79	83	85	1990[2]	75	79	76	73	71	70	71
1987	81	84	82	78	76	79	71	1991	79	87	84	76	72		

[1] Indicates current supply of feed for grazing on non-irrigated pastures & ranges relative to that expected from existing stands under very favorable weather conditions. [80 & over, good to excellent; 65–79, poor to fair; 50–64, very poor; 35–49, severe drought; under 35, extreme drought.]

[2] Preliminary. *Source: Statistical Reporting Service, U.S.D.A.* T.57A



Average Wholesale Prices of Beef Steers at Omaha, Choice (900–1100 Lbs.) In Dollars Per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	58.79	61.02	61.58	66.30	70.66	68.83	65.80	64.50	64.81	64.81	64.20	63.93	64.60
1988	65.00	68.31	71.53	72.71	75.15	70.58	65.96	67.08	67.71	69.13	70.07	71.21	69.58
1989	72.35	72.92	75.81	75.31	74.52	71.71	70.74	71.09	68.44	69.69	72.48	75.21	72.52
1990	76.73	76.61	78.15	79.36	77.57	75.63	74.46	76.22	75.75	77.50	79.93	80.88	77.40
1991	78.95	78.63	80.75	80.77	78.28	74.63	72.08	67.25	67.20	68.91			

Source: Economic Research Service, U.S.D.A. T.65

Average Prices of Steers (Stocker & Feeder) Kansas City In Dollars Per 100 Pounds

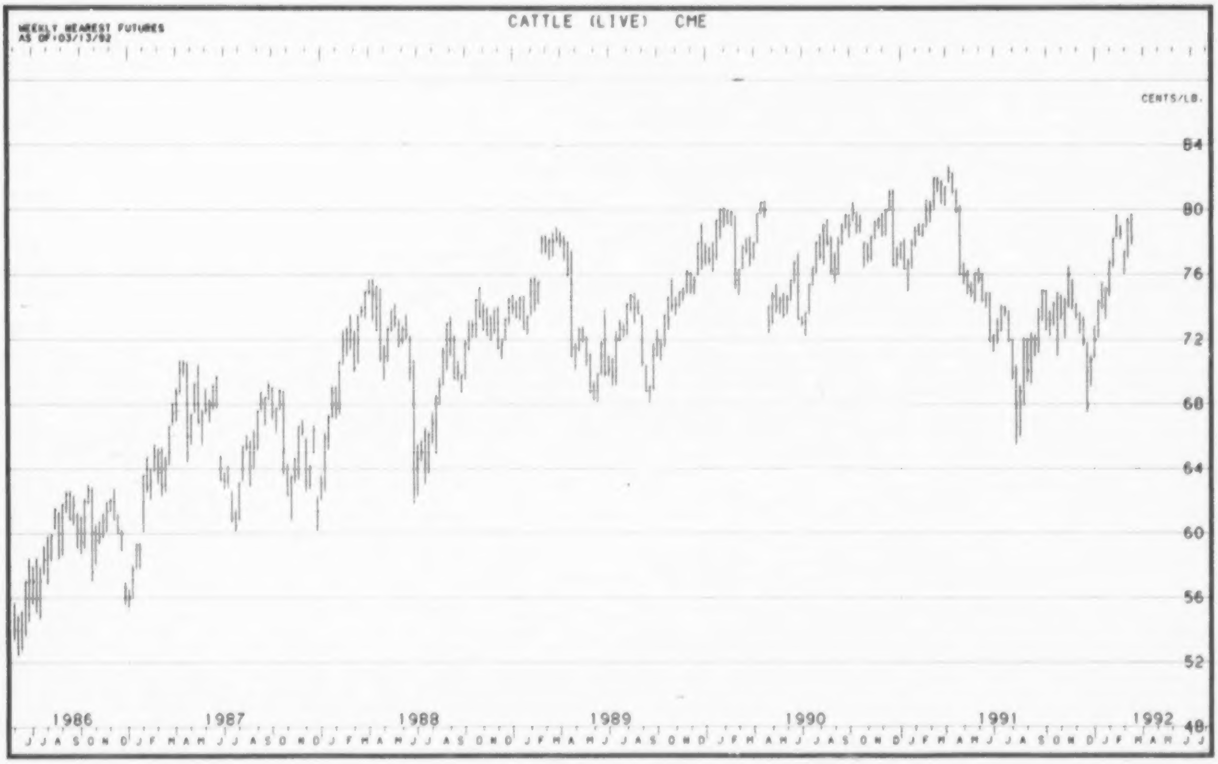
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	65.75	69.01	68.47	70.56	70.53	70.21	71.22	75.31	77.10	73.21	74.92	73.69	71.32
1988	80.26	81.64	83.12	82.61	78.99	70.77	74.14	79.45	79.89	82.99	81.31	80.99	80.50
1989	82.02	82.91	80.98	78.58	78.25	79.08	81.64	84.54	83.56	81.24	82.65	82.30	81.45
1990	82.47	82.86	87.50	90.81	91.90	94.74	93.50	92.30	91.50	N.A.	92.75	92.67	90.27
1991	90.70	92.75	94.88	99.13	95.70	94.33	94.00	N.A.	N.A.	N.A.			

Source: Economic Research Service, U.S.D.A. T.61

Federally Inspected Slaughter of Cattle in the United States In Thousands of Head

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1987	3,084	2,564	2,805	2,875	2,780	2,945	3,009	2,972	2,977	3,024	2,640	2,793	34,468
1988	2,836	2,679	2,812	2,707	2,830	2,983	2,898	3,120	2,927	2,871	2,698	2,685	34,048
1989	2,711	2,500	2,744	2,576	2,947	2,951	2,730	2,975	2,706	2,876	2,694	2,600	33,010
1990[1]	2,775	2,437	2,690	2,550	2,920	2,873	2,796	2,918	2,553	2,877	2,622	2,380	32,391
1991[1]	2,808	2,407	2,443	2,673	2,785	2,650	2,784	2,843	2,634				

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.66



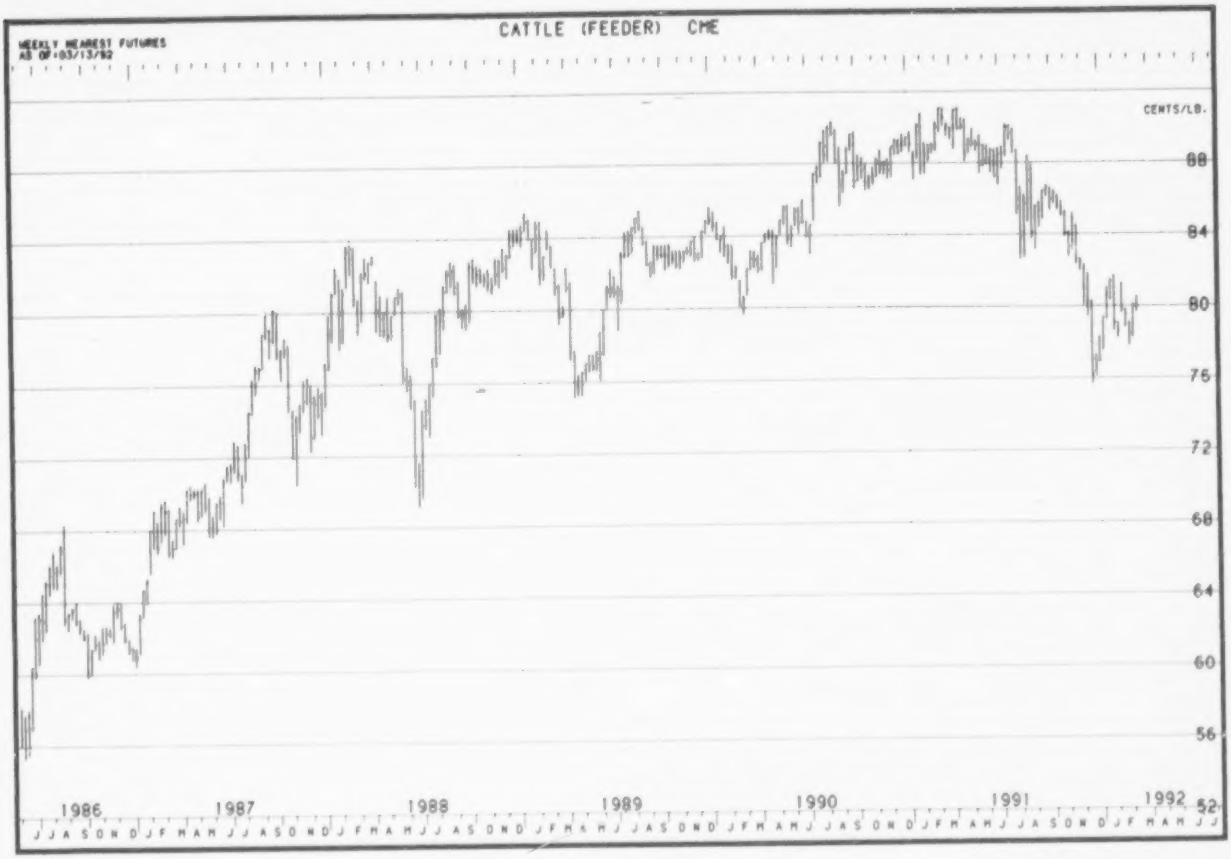
High, Low & Closing Prices of June Live Beef Cattle Futures at Chicago In Cents per Pound

Year of Delivery		Year Prior to Delivery									Delivery Year						Life of Delivery Range
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1984	High	—	—	62.25	64.65	66.55	65.70	65.55	66.30	67.65	68.35	69.35	69.85	69.70	67.35	67.25	69.85
	Low	—	—	61.35	61.10	62.95	63.00	63.20	63.60	65.05	65.45	65.10	67.00	65.62	64.60	63.32	61.10
	Close	—	—	61.80	64.15	63.25	64.90	63.75	65.45	67.05	66.05	69.10	68.70	66.17	64.62	66.05	—
1985	High	—	—	66.55	67.35	67.40	67.70	67.10	68.15	68.10	69.00	69.50	67.75	66.92	64.27	61.47	69.50
	Low	—	—	66.00	65.00	65.00	65.70	65.20	66.30	66.50	66.35	66.55	64.60	62.32	59.05	56.80	56.80
	Close	—	—	66.55	65.00	67.37	66.40	66.75	67.70	67.85	68.35	67.37	67.20	62.65	60.10	56.80	—
1986	High	—	66.60	66.05	64.55	62.75	62.25	63.40	62.45	63.05	63.15	62.50	60.52	57.55	59.35	57.10	66.60
	Low	—	65.60	63.00	58.10	59.10	56.25	60.00	59.90	60.15	58.65	57.40	58.20	53.17	53.40	52.42	52.42
	Close	—	65.90	63.35	60.20	59.60	62.22	61.47	62.42	61.40	61.97	61.37	58.25	57.20	54.07	56.97	—
1987	High	57.50	57.00	57.95	60.00	58.75	59.25	57.45	58.07	57.50	61.17	62.50	64.35	67.25	70.45	69.75	70.45
	Low	53.35	53.70	53.30	55.85	57.00	56.30	55.25	56.50	54.90	55.67	59.45	59.80	62.75	65.47	66.90	53.30
	Close	56.35	54.20	55.60	58.30	58.75	56.82	57.05	57.20	55.55	61.02	62.40	63.42	67.20	67.67	69.62	—
1988	High	63.20	65.00	64.90	64.90	68.40	69.65	68.20	65.32	65.92	68.90	71.25	72.50	72.37	74.22	73.57	74.22
	Low	61.20	62.10	62.30	62.60	63.67	67.22	60.60	60.80	62.00	65.30	66.70	67.37	68.60	70.60	69.47	60.60
	Close	63.20	62.40	64.40	64.45	68.15	67.32	62.52	63.77	65.50	66.85	68.40	70.87	70.90	72.15	70.60	—
1989	High	69.20	70.90	75.05	75.20	74.80	74.60	74.90	74.00	74.92	75.67	75.90	75.25	73.37	72.80	73.85	75.90
	Low	68.60	69.00	69.50	71.85	71.55	72.30	73.25	71.80	71.32	72.50	73.35	72.82	70.10	68.50	68.15	68.15
	Close	69.20	69.80	73.75	73.05	74.10	73.77	73.87	72.20	74.17	75.40	75.05	73.02	71.45	68.90	73.72	—
1990	High	—	72.40	72.90	73.25	73.45	72.55	72.50	72.37	72.25	72.75	73.00	73.45	74.20	75.42	77.35	77.35
	Low	—	69.75	69.97	70.60	71.55	71.10	70.85	70.55	71.05	71.40	70.00	70.75	72.40	73.07	74.15	69.75
	Close	—	69.80	71.05	72.25	71.87	72.00	71.25	71.57	71.87	71.80	70.95	72.92	72.97	74.00	76.65	—
1991	High	—	74.60	74.20	75.45	75.42	74.10	73.90	74.30	75.05	75.27	77.05	78.10	78.37	76.40	76.05	78.37
	Low	—	72.75	72.62	72.80	72.52	72.70	72.15	72.32	73.47	72.42	74.37	76.25	75.52	74.25	71.87	71.87
	Close	—	72.75	72.90	75.45	73.00	72.85	73.10	73.87	74.82	74.85	77.02	77.12	76.10	75.72	71.87	—
1992	High	75.95	75.15	74.90	74.35	73.90	72.95	73.05	71.65	70.85							
	Low	74.80	74.80	73.55	72.60	70.25	70.40	71.40	70.00	67.40							
	Close	75.00	75.00	73.65	73.50	71.10	72.50	71.40	70.92	68.55							

Source: Chicago Mercantile Exchange

T.62

CATTLE AND CALVES



Average Open Interest of Live Beef Cattle Futures at Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	47,651	54,749	61,161	61,197	58,832	52,045	46,036	45,464	52,674	49,597	48,839	49,851
1984	55,430	53,303	59,509	55,090	48,169	41,389	40,280	36,359	38,724	39,975	56,086	58,501
1985	58,544	57,763	60,999	59,309	53,332	48,603	49,092	43,730	49,443	55,616	67,849	63,076
1986	57,943	54,947	55,427	49,185	56,179	55,018	64,385	63,170	64,401	56,402	62,751	58,561
1987	62,770	83,958	91,018	89,818	98,350	86,144	81,399	81,315	90,915	80,156	75,379	74,839
1988	77,436	92,363	105,307	97,582	91,480	85,257	82,080	81,025	80,935	80,356	82,790	76,683
1989	80,464	84,909	93,240	82,267	81,588	69,981	78,045	76,582	73,530	65,807	73,962	71,508
1990	95,515	108,149	104,647	95,709	86,875	76,130	70,462	68,375	69,611	67,122	70,576	69,647
1991	74,392	79,695	84,574	83,322	78,284	70,107	67,868	68,359	74,483	70,395	75,788	74,687

Source: Chicago Mercantile Exchange

T.64

Volume of Trading of Live Beef Cattle Futures at Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	370.4	332.7	455.8	489.0	389.1	328.9	302.2	324.9	344.1	335.4	297.9	277.9	4,248.2
1984	457.4	397.6	404.2	323.2	256.4	215.5	265.3	202.6	181.0	245.9	345.7	258.5	3,553.3
1985	340.7	290.3	327.9	304.3	412.0	317.2	440.5	370.2	400.2	445.3	405.0	383.8	4,437.3
1986	492.6	381.0	408.2	462.1	424.2	374.5	448.7	373.0	387.1	376.9	289.4	273.0	4,690.5
1987	376.6	426.7	474.2	456.6	523.7	357.8	394.8	412.7	485.8	580.4	363.1	377.0	5,229.3
1988	425.1	455.6	543.9	468.0	467.8	571.3	463.4	511.8	415.0	417.5	383.9	353.9	5,477.2
1989	452.9	357.7	409.0	404.2	382.9	370.3	327.9	331.9	376.9	345.4	266.2	240.2	4,265.7
1990	400.5	350.0	354.1	327.6	372.2	263.9	298.5	327.7	273.3	320.3	268.4	240.8	3,797.4
1991	344.2	252.1	288.9	300.4	247.2	254.8	311.2	406.1	321.2	386.3	327.7	352.8	3,792.9

Source: Chicago Mercantile Exchange

T.63

Beef Steer-Corn Price Ratio at Omaha[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	24.8	24.1	22.2	21.5	21.5	21.0	20.4	21.7	21.8	25.7	27.8	26.7	23.3
1986	25.6	24.4	24.0	22.9	23.0	22.3	28.9	36.7	42.1	42.7	39.7	38.8	31.0
1987	40.8	43.9	41.9	42.2	40.2	38.9	41.4	43.9	42.1	41.4	38.4	36.7	41.0
1988	36.4	37.4	38.4	39.4	38.6	29.5	24.4	26.1	26.4	26.4	28.4	27.9	31.6
1989	28.1	28.7	29.4	30.2	29.3	29.1	29.6	32.0	30.8	31.1	32.2	32.8	30.3
1990[2]	34.2	34.0	32.6	31.1	29.3	27.9	28.5	30.9	34.5	36.5	37.3	36.5	32.8
1991[2]	35.3	34.3	34.0	32.8	32.7	32.0	31.3	28.5	28.8	29.9			

[1] Bushels of No. 2 yellow corn equal in value to 100 pounds liveweight of choice slaughter steers, 900–1100 lbs. [2] Preliminary.
Source: Economic Research Service, U.S.D.A. T.56c

U.S. Farm Value, Income & Wholesale Prices of Cattle & Calves

Year	Farm Value of All Cattle—Jan. 1: Per Head $	Farm Value of All Cattle—Jan. 1: Total Million $	Gross Income From C. & C.[2] Million $	At Omaha[3] Steers: Prime	At Omaha[3] Steers: Choice	At Omaha[3] Steers: Good	At Omaha[3] Heifers: Good	At Omaha[3] Heifers: Choice	Feeder Steers All Weights at K.C.	Cows, Utility Omaha	Vealers, Choice So. St. Paul	Cows, Commercial Omaha	Beef, Dressed (CarLots): Steer, Choice	Beef, Dressed (CarLots): Heifer, Choice	Beef, Dressed (CarLots): Cow[5] Canners[6]
				Dollars Per 100 Pounds											
1985	402	44,139	29,536		58.37	53.28	55.52	58.24	62.08	38.32	58.28	37.91	90.68	88.48	74.13
1986	391	41,280	29,376		57.74	52.04	54.76	57.56	60.38	37.22	59.92	36.96	89.00	87.72	71.31
1987	407	41,483	33,918		64.60	58.53	61.48	64.34	71.32	44.83	78.92	44.84	97.24	96.21	83.70
1988	523	52,046	36,683		69.58	67.06	69.44	68.16	80.50	47.94	227.67[7]	45.80	103.07	102.58	88.61
1989	580	56,908	37,123		72.52	70.28	72.90	71.93	81.45	49.70	248.62[7]	47.28	107.80	107.70	94.40
1990[1]	614	60,285			77.40		77.91		86.12		251.75[7]	53.13			
1991[1]	654	64,662			73.83		73.86					55.22			
1992[1]	629	63,016													

[1] Preliminary. [2] Excludes interfarm sales & Gov't. payments. Cash receipts from farm marketings + value of farm home consumption. [3] Weighted average prices sold out of first hands for slaughter. [5] All weights. [6] & cutter. [7] Price is per head. *Source: Statistical Reporting Service, U.S.D.A.* T.60

Average Price Received by Farmers for Beef Cattle In Dollars Per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1985	57.40	58.50	57.30	56.20	55.30	53.60	50.20	49.40	49.10	52.10	54.70	53.70	53.70
1986	53.20	53.00	52.40	50.30	51.00	50.10	52.90	54.40	54.60	54.40	54.60	53.20	52.60
1987	56.40	58.80	59.30	62.60	63.00	62.50	61.10	61.90	63.70	62.90	62.00	62.20	61.10
1988	65.40	67.40	68.30	69.00	69.30	65.00	63.20	65.90	67.20	67.00	66.70	67.20	66.60
1989	70.60	71.60	72.00	70.10	68.80	67.60	68.00	69.70	68.20	68.70	69.80	71.00	69.50
1990[2]	73.70	74.60	74.20	74.60	74.60	74.20	73.60	76.00	75.00	75.50	75.30	77.10	74.80
1991[2]	76.60	77.00	78.50	78.20	75.90	73.60	71.60	68.80	68.60	69.40			

[1] Weighted average by quantities sold. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.68

Average Price Received by Farmers for Calves In Dollars Per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1985	64.10	65.40	65.90	65.40	65.60	62.60	60.00	61.40	58.30	60.20	61.40	58.80	62.10
1986	60.10	62.70	61.90	58.90	58.00	58.10	59.40	61.10	63.40	62.70	62.20	62.20	61.10
1987	66.40	70.60	72.50	75.10	77.40	78.80	80.30	82.30	85.90	81.40	82.90	83.00	78.50
1988	88.20	92.60	93.50	93.20	93.40	84.90	87.70	91.00	89.50	87.80	87.80	88.60	89.85
1989	92.80	95.90	94.00	90.40	91.10	94.10	94.60	94.20	91.10	88.10	86.70	89.10	91.84
1990[2]	90.10	96.00	99.10	100.40	101.00	98.10	95.90	98.90	95.40	92.80	93.80	97.80	96.51
1991[2]	98.00	104.00	107.00	104.00	107.00	106.00	103.00	98.30	96.10	93.90			

[1] Weighted average by quantities sold. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.69

Federally Inspected Slaughter of Calves & Vealers in the U.S. In Thousands of Head

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	270	236	261	252	246	221	274	272	271	298	268	298	3,168
1986	289	256	276	284	257	240	281	262	263	276	238	272	3,195
1987	248	225	251	215	189	214	220	202	229	233	211	242	2,679
1988	205	203	216	169	171	204	207	227	207	197	202	203	2,411
1989	196	175	194	152	157	161	169	189	173	191	175	167	2,100
1990[1]	175	145	165	128	137	131	139	147	132	158	149	136	1,742
1991[1]	151	121	120	106	103	90	108	108	115				

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.67

Cement

Cement production in the U.S. in 1991 fell to 71.13 million short tons from 77.11 million the previous year. Forty-five companies and one state agency operated 126 plants and together produced 68.5 million tons of portland cement, 2.7 million tons of masonry cement, and small quantities of other cements.

Because of reduced construction activities in a recessionary climate, domestic demand for cement declined in 1991 and was down 12 percent for the year. Substantial declines occurred in the South Atlantic and Pacific regions.

Cement imports amounted to about 9.3 million tons, against 12.98 million the previous year, and were supplied by Mexico and Canada. Exports increased for the fourth consecutive year and were 600,000 tons, compared with 554,000 in 1990. Canada was the market for about 90 percent of those exports.

The domestic industry continued to introduce state-of-the art grinding, separation, and emission control technology to modernize plants. Companies continued to raise the use of waste materials in kilns to substitute for conventional fuels.

World cement production in 1991 was estimated at 1.59 billion tons, somewhat above 1.251 billion the year before. China, the Soviet Commonwealth, Japan, and the U.S. were the chief producers.

World Production of Hydraulic Cement by Selected Countries In Millions of Short Tons

Year	Rep. of Korea	Brazil	Canada	China	France	Germany	India	Italy	Japan	Poland	Spain	South Africa	Turkey	United Kingdom	United States	USSR	World Total
1986	25.8	27.9	11.7	178.0	25.9	29.3	40.1	39.6	78.6	17.4	26.5	7.4	22.1	14.8	79.9	148.9	1,110.6
1987	28.3	28.1	13.9	198.0	26.0	27.9	40.8	41.1	78.9	17.7	25.8	7.4	24.2	14.8	79.5	151.5	1,160.4
1988	32.0	27.9	13.3	224.0	26.5	28.9	44.9	40.8	85.5	18.7	26.5	9.4	25.0	16.0	78.3	153.8	1,171.8
1989	33.6	27.6	13.0	228.0	26.5	29.2	46.4	40.2	89.6	16.5	27.0	9.6	26.2	15.4	78.6	154.3	1,248.9
1990[1]	37.0			224	26.5	31.1	48.5	40.2	90.4		28				78.6	151.0	1,251
1991[2]	39.0			228	27.0	32.0	51.0	41.0	92.0						71.0	153.0	1,259

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines* T.70

Salient Statistics of Cement in the United States

Year	Net Import Reliance as a % of Apparent Consumption	Production: Portland (Million Tons)	Production: Others[2] (Million Tons)	Production: Total (Million Tons)	Capacity Used at (Portland Mills) %	Shipments From Mills: Total Mil. Tons	Shipments From Mills: Value[4] $ Mil.	Average Value (F.O.B. Mill) $ per Ton	Stocks at Mills Dec. 31 (Million Tons)	Imports[5] (Million Tons)	Exports[5] (Million Tons)	Apparent Consumption (Million Tons)	Raw Materials Used in Producing Portland Cement: Cement Rock (Mil. Short Tons)	Limestone[6] (Mil. Short Tons)	Clay & Shale (Mil. Short Tons)	Gypsum & Anhy. Dr. (Mil. Short Tons)	Total (All) (Mil. Short Tons)
1986	18	75.2	3.6	78.8	73.7	87.6	4,408	50.32	6.7	16.1	.1	91.5	23.5	79.0	9.0	4.1	122.2
1987	19	74.6	3.6	78.2	73.6	89.2	4,394	49.23	6.1	17.5	.1	93.9	18.0	81.1	9.7	4.9	119.9
1988	19	73.3	3.6	76.9	74.3	89.5	4,370	48.85	6.0	17.3	.1	93.3	23.4	79.5	8.9	4.2	122.5
1989	16	73.9	3.3	77.2	75.3	86.2	4,243	49.20	6.3	15.5	.5	90.7	21.9	81.8	9.1	4.3	123.5
1990[3]	14			77.1		86.2		49.30	6.2	13.0	.5	89.6					
1991[3]	11			71.1		77.9			6.0	9.3	.6	79.0					

[1] Preliminary. [2] Masonry, natural & pozzolan (slag-line). [3] Estimate. [4] Value received f.o.b. mill, excluding cost of containers. [5] Hydraulic & clinker cement. [6] Including oyster shells. *Source: Bureau of Mines* T.71

Average Price of Bulk Cement In 20 Cities In Dollars per Short Ton

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	63.28	63.25	63.66	63.50	63.50	64.35	64.25	64.25	63.73	63.73	63.73	63.73	63.75
1988	64.08	64.07	64.44	65.01	65.02	66.39	65.45	65.48	64.42	64.27	64.17	63.71	64.71
1989	63.48	63.53	63.53	63.97	63.14	63.14	63.24	63.24	63.34	62.85	62.61	62.71	63.23
1990	62.56	62.20	62.31	62.72	63.06	62.95	63.47	63.22	62.62	62.44	62.20	62.10	62.65
1991	62.10	63.39	63.84	63.09	63.53	63.79	63.98	64.11	63.88	63.80	63.63		

Source: Bureau of Labor Statistics T.74

Shipments of Finished Portland Cement from Mills in U.S. In Millions of Barrels (Approx. 376 lbs.)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total[1]
1987	25.5	24.9	34.1	41.5	43.2	47.8	49.3	45.6	47.6	50.0	38.3	30.8	481.2
1988	21.0	26.3	36.4	39.9	45.4	50.1	43.8	49.6	47.6	47.3	39.8	32.5	478.0
1989	27.2	23.1	33.8	39.3	44.6	47.1	43.8	51.8	45.3	49.3	40.2	26.3	474.3
1990[2]	29.6	27.0	35.2	38.7	44.8	46.5	44.7	48.2	42.6	46.3	37.9	25.4	467.2
1991[2]	21.3	23.9	27.2	35.4	39.9	40.0	42.6	43.4	40.3	44.2	31.7		

[1] Does not necessarily agree with monthly figures; compiled from producers' annual reports and are final. [2] Preliminary *Source: Bureau of Mines* T.73

Cheese

Milk production during the January-September 1991 period was just slightly ahead of 1990, as yield per cow trended higher. Milk output per cow over the first three quarters of 1991 averaged 1,255 pounds a month, compared with 1,214 pounds in the same period of 1990. The milk-feed price ratio, a measure of profitability in milk production, declined in the first nine months of 1991. That was expected to discourage producers from increasing the rate of feeding, which, in turn, was likely to reduce output.

Milk marketings in 1991 were forecast at 146.6 billion pounds, up marginally from 1990. Beginning commercial stocks of milk in 1991 were about 1 billion pounds higher than in 1990, making the supply of milk in 1991 up by close to 1 percent.

During January-August 1991, total cheese production was 4.54 billion pounds, down 2 percent from the same period of 1990. Output of American cheese in the period fell 4 percent to 1.89 billion pounds, and production of other cheeses was 2.1 billion pounds, down only slightly from a year earlier. Cottage cheese output was 556 million pounds, more than 3 percent below the level in the same 8-month period of 1990. In June-August 1991, output of dairy products was slightly less than a year earlier. Commercial use of American cheese during the first two quarters of 1991 totaled 1.33 billion pounds, down 4 percent from the same period of 1990. Use of cheeses other than American in the two quarters was 1.68 billion pounds, barely above the level seen in 1990.

Per capita consumption of American cheese in 1990 was 11.1 pounds, versus 11 in 1989. Other cheese consumption was 13.5 pounds, against 12.8 the year before, while cottage cheese use was 3.4 pounds, compared with 3.6 a year earlier.

Commercial inventories of American cheese as of September 1, 1991 were almost 361 million pounds, up more than 1 percent from 1990 and 22 percent above what was on hand in 1989. Commercial stocks of other cheeses were almost 102 million pounds, down 13 percent from the 1990 level. Government stocks of American cheese on September 1, 1991 were almost 31 million pounds, up significantly from only 5 million pounds a year earlier.

During January-September 1991, the Commodity Credit Corporation (CCC) purchased close to 76 million pounds of American cheese, compared with none in the year-earlier period. As of October 1, 1991, uncommitted CCC inventories of American cheese were 26 million pounds, against none a year earlier. An issue during 1991 was whether U.S. dairy products would be included in any food aid package for the Soviet Commonwealth.

World Cheese (Total[1]) Production In Millions of Metric Tons

Year	Argentina	Australia	Brazil	Canada	Mexico	Czechoslovakia	Denmark	France	Germany	Italy	Netherlands	New Zealand	USSR	Sweden	Switzerland	United Kingdom	United States
1983	245	158	200	183	230	123	249	1,245	446	656	485	114	744	115	135	244	2,186
1984	239	161	200	192	188	130	293	1,287	465	661	515	110	780	116	130	245	2,120
1985	210	160	205	213	187	131	253	1,300	495	684	522	118	809	109	126	260	2,305
1986	256	170	185	226	262	134	252	1,320	530	694	534	127	844	106	131	256	2,363
1987	277	177	195	246	298	142	271	1,342	817	704	552	113	861	107	128	263	2,424
1988	265	176	200	252	370	146	258	1,378	849	737	559	128	894	115	134	299	2,527
1989	260	190	220	247	373	152	275	1,485	885	760	568	128	900	109	137	280	2,546
1990[2]	270	175	200	250	384	150	293	1,490	749	811	593	122	881	108	138	316	2,749
1991[3]	280	176	220	255	395	140	283	1,510	830	810	613	125	800	107	139	295	2,695
1992[3]	280	180	220	250	400	135	288	1,520	840	780	600	129	770	109	140	278	2,885

[1] Farm & factory production. [2] Preliminary. [3] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.75

Supply and Distribution of All Cheese in the United States In Millions of Pounds

Year	Supply					Cheese 40-Lb. Blocks Wisc. Assembly Points ¢ per lb.	Distribution							
	Production		Jan. 1 Commercial Stocks	Imports[4]	Total Supply		Exports & Shipments[5]	Gov't.		Am. Cheese Removed by U.S.D.A. Programs	Total Disap.	Domestic Disapp.		
	Whole Milk[2]	All Cheese[3]						Jan. 1 Stocks	Dec. 31 Stocks			Military	Civilian	Civilian Per Capita
1983	2,928	4,820	1,064	286	6,171	138.28	87	647	793	833	4,905	18	4,798	20.52
1984	2,648	4,674	1,266	306	6,246	137.96	108	793	621	447.3	5,184	—5,076—		21.42
1985	2,855	5,081	1,062	303	6,441	127.72	125	621	544	629.0	5,501	—5,376—		22.47
1986	2,798	5,209	945	295	6,449	127.30	99	543.7	420	468.4	5,660	—5,560—		23.02
1987	2,717	5,345	789	265	6,399	123.19	89	420.1	81.2	282.0	5,937	—5,850—		24.01
1988	2,757	5,572	460	252	6,284	123.80	80	81.2	36.7	238.1	5,886	—5,806—		23.57
1989[1]	2,674	5,615	398	276	6,289	138.79	74	36.7	6.6	37.4	5,949	—5,885—		23.71
1990[6]	2,891	6,061	330	298	6,689	136.69	67	6.6	8.2	21.5	6,200	—6,164—		24.60
1991[6]	2,800	6,000	458			124.41		8.2						

[1] Preliminary. [2] Whole milk American cheddar. [3] All types of cheese except cottage, pot and baker's cheese. [4] Imports for consumption. [5] Commercial. [6] Estimate. *Source: Department of Agriculture* T.76

CHEESE

Cheese Production in the United States In Millions of Pounds

Year	American			Swiss, Including Block	Mun-ster	Brick	Lim-burger	Neuf-cha-tel	Cream Cheese	Italian Varie-ties	Blue mold	All Other Varie-ties	Total of All Cheese[2]	Cottage Cheese		
	Whole Milk	Part Skim	Total											Low-Fat	Curd[4]	Cream-ed[5]
1981	2,642	5.9	2,664	214.4	67.4	13.9	1.2	—241.3—		994.4	30.2	66.6	4,278	208.3	647.5	773
1982	2,752	6.9	2,759	221.1	71.7	14.3	1.5	—262.8—		1,087.8	31.0	92.4	4,542	217.6	628.9	749
1983	2,928	4.1	2,932	209.5	69.6	14.2	1.1	—270.0—		1,200.2	31.5	90.6	4,820	215.9	618.2	743
1984	2,649	2.7	2,652	208.0	76.0	16.0	1.2	—276.5—		1,318.8	34.1	92.2	4,674	229.3	606.2	736
1985	2,855	2.4	2,857	222.9	82.1	20.1	1.0	—293.8—		1,491.3	33.3	77.7	5,081	244.4	598.8	716
1986	2,798	2.1	2,800	227.3	88.5	20.4	1.1	—321.5—		1,632.8	34.2	82.1	5,209	265.5	600.1	705
1987	2,717	.9	2,718	227.2	92.6	28.9	1.1	—342.2—		1,799.8	35.9	99.0	5,344	270.3	573.8	675
1988	2,757	1.1	2,758	250.1	83.3	24.8	1.0	—375.9—		1,937.1	37.8	104.3	5,572	290.9	556.7	647
1989	2,673	.8	2,674	231.2	91.1	17.5	.9	—34.6—		2,042.9	34.6	121.3	5,614	300.3	525.5	570
1990[1]	2,891	1.0	2,892	—3,169—									6,061			
1991[3]	2,600		2,600	—3,400—									6,000			

[1] Preliminary. [2] Excludes full-skim cheddar and cottage cheese. [3] Estimated. [4] Includes cottage, pot, and baker's cheese with a butterfat content of less than 4%. [5] Includes cheese with a butterfat content of 4 to 19%. *Source: Economic Research Service, U.S.D.A.* T.77

Wholesale Price of Cheese, 40-lb Blocks, Wisconsin Assembly Points In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	139.3	138.4	138.0	137.6	137.4	137.4	137.0	137.1	139.2	140.7	140.7	136.7	138.3
1984	135.8	135.5	135.9	135.9	135.9	136.0	136.7	138.6	144.3	143.8	139.7	137.5	138.0
1985	136.5	134.3	132.1	129.9	128.0	126.8	124.7	124.3	124.3	124.3	123.8	123.9	127.7
1986	123.8	124.5	123.2	125.0	126.0	125.4	126.7	129.5	129.7	130.2	133.4	130.4	127.3
1987	127.8	122.5	122.3	122.4	122.0	122.0	123.2	125.5	126.6	121.9	121.3	120.8	123.2
1988	118.4	116.1	115.6	115.1	115.0	116.2	118.3	127.6	134.6	136.4	136.3	136.0	123.8
1989	129.1	117.6	117.9	120.4	123.9	130.8	140.6	143.3	155.8	160.3	163.6	162.2	138.8
1990	152.3	131.6	130.7	140.5	145.8	149.5	151.0	150.3	142.6	114.9	112.0	112.7	136.7
1991	111.4	111.5	111.5	111.8	115.0	121.4	128.4	136.1	139.7				

Source: Statistical Reporting Service, U.S.D.A. T.79

United States Total Cheese Production[1] In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	342.8	317.8	374.1	379.5	394.2	390.9	353.0	340.6	334.4	343.4	334.1	372.7	4,278
1982	351.3	331.0	391.7	—1,203—			—1,121—			—1,143—			4,542
1983	384.8	359.3	425.3	413.1	439.4	444.7	402.1	381.3	373.0	391.9	389.3	415.4	4,820
1984	382.1	366.0	412.3	409.9	432.9	415.4	379.9	371.3	357.9	381.2	368.9	396.3	4,674
1985	395.0	361.5	416.0	435.3	461.1	447.2	443.8	427.3	403.6	432.9	415.4	441.8	5,081
1986	433.9	400.0	457.1	459.5	482.5	457.4	436.6	421.8	410.1	410.2	401.0	439.4	5,209
1987	422.0	398.6	457.4	462.1	477.8	465.6	453.8	426.0	430.7	448.6	431.8	469.7	5,344
1988	439.5	436.2	491.6	475.3	488.2	476.7	454.9	442.0	451.9	470.0	458.9	486.5	5,572
1989	456.6	419.5	488.4	472.6	494.9	485.5	464.6	460.4	448.5	464.0	453.0	489.5	5,614
1990[2]	483.7	471.9	531.7	521.1	542.8	522.8	502.2	495.0	472.6	505.9	495.5	522.1	6,061
1991[2]	501.7	458.0	521.4	500.7	516.0	505.4	489.9	493.7	476.5	507.9			

[1] Excludes cottage and full skim American. [2] Preliminary. *Source: Statistical Reporting Service, U.S.D.A.* T.78

Cold Storage Holdings of All Varieties of Cheese in the U.S., on First of Month In Millions of Pounds[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1981	578.8	601.7	596.3	593.6	632.4	649.8	685.7	714.2	719.4	694.3	682.4	677.5
1982	709.6	711.7	696.4	722.4	—	—	803.9	—	—	864.3	—	—
1983	963.5	1,032	1,088	1,118	1,132	1,138	1,162	1,194	1,231	1,248	1,235	1,215
1984	1,205	1,201	1,220	1,217	1,182	1,208	1,193	1,186	1,148	1,115	1,078	1,044
1985	986.2	968.9	944.4	907.7	898.6	911.0	954.2	963.5	962.9	941.0	891.8	877.5
1986	852.9	835.8	813.2	815.7	838.4	873.3	892.8	915.6	916.2	859.0	805.0	757.0
1987	693.6	683.9	652.4	646.5	645.1	666.8	659.0	642.5	606.6	580.8	538.0	495.9
1988	457.1	455.1	448.3	443.8	451.9	460.1	480.9	496.1	460.8	421.3	400.7	366.7
1989	388.1	395.3	404.4	396.6	412.1	431.9	429.6	430.4	419.8	370.2	331.4	330.6
1990[1]	328.0	358.4	374.9	395.8	413.4	441.6	465.0	484.6	475.7	459.9	445.4	437.3
1991[1]	457.8	473.8	450.0	486.4	509.3	509.3	518.9	511.5	494.1	477.9	425.7	

[1] Preliminary. [2] Quantities are given in "net weight." *Source: Crop Reporting Board, U.S.D.A.* T.80

Chromite

South African ferrochrome producers fought declining usage trends in the world market and each other during 1991. South Africa is the largest producer of chrome ore and ferrochromium, and competition for market share among the producers is fierce.

Global recession and the consequent slowdown in demand was reflected in lower U.S. import figures for ore and steel. In 1990, imports of chromite amounted to 584,000 tonnes. For the first eight months of 1991, total chromite imports were 118,730 tonnes. Chromite imports in 1990 were valued at $22.1 million, while totaling only $8 million for the first eight months of 1991.

U.S. ferrochromium imports were similarly lower. For all of 1990, ferrochromium imports totaled 415,000 tonnes, valued at $246.4 million. For 1991's first eight months, ferrochromium imports were just 301,000 tonnes, totaling $175 million.

Domestic chromite usage is centered in the chemical and metallurgical industries with 1990's full-year usage amounting to 358,620 tonnes. Refractory usage in 1990 accounted for 43,670 tonnes. In the first eight months of 1991, chemical and refractory usage was 232,349 tonnes, with refractory uses taking 25,669 tonnes.

Medium and high-carbon ferrochromium stainless and heat-resisting steel are the largest domestic usage category for ferrochromium. In the first eight months of 1991, this sector accounted for 180,194 tonnes.

While South Africa is the largest exporter of ferrochromium to the U.S., it is not the sole supplier of the metal. For the first eight months of 1991, South Africa supplied 122,647 tonnes of high-carbon ferrochromium to the U.S., compared with full-year 1991's 172,368 tonnes of gross-weight ferrochromium. That was followed by Turkey, which supplied the U.S. with 36,969 tonnes for the 1991 period, compared with full-year 1990's 45,320, and Yugoslavia with 33,700 tonnes of gross-weight exports, against 1990's 48,904.

In 1990, South Africa led the way as a supplier of low-carbon ferrochromium to the U.S. with eight-month exports of 8,693 tonnes. Germany provided 8,548 tonnes and Turkey 5,628 tonnes.

In 1990, U.S. imports for consumption of chromite of all grades totaled 584,727 tonnes. South Africa supplied 520,266 tonnes, followed by Turkey with 29,000 tonnes. In the first eight months of 1991, South Africa exported 96,922 tonnes of chromite ore to the U.S. Imports for January to August 1991 totaled 118,730 tonnes.

World Mine Production of Chromite In Thousands of Metric Tons[3] (Gross Weight)

Year	Albania	Brazil	Cuba	Finland	Greece	Iran	India	Madagascar	New Caledonia	Philippines	South Africa	Turkey	USSR	Yugoslavia	Zimbabwe	World Total[1]
1981	783	261	23	454	27	35	369	110		484	3,164	442	3,200		591	10,018
1982	744	304	30	380	32	45	401	49		355	2,680	499	3,240		476	9,348
1983	755	178	37	271	30	53	397	50		294	2,718	381	3,240		463	9,050
1984[3]	720	260	38	446	61	59	423	59	84	261	3,407	487	2,940		477	9,776
1985	825	190	38	506	59	56	565	127	79	272	3,699	589	3,360	10	536	10,945
1986	850	223	50	678	62	56	638	83	72	174	3,907	543	3,640	9	533	11,555
1987	830	191	52	543	64	56	624	107	62	188	3,847	600	3,570	13	570	11,355
1988	750	240	55	700	63	56	759	107	70	190	4,245	625	3,700	12	561	12,167
1989	700	225	55	750	65	56	800	107	66	190	3,800	650	3,800	12	570	11,191
1990[1]	600	476		500			995	100		198	4,498	850	3,800		600	12,846
1991[1]	600	470		500			990			190	4,490	850	3,800		600	12,820

[1] Estimate. [2] Preliminary. [3] Data prior to 1984 are in thousands of short tons. *Source: Bureau of Mines* T.81

U.S. Salient Statistics of Chromite In Thousands of Metric Tons[7]

Year	% Net Import Reliance of Apparent Consumption	Production of Chromium Metals[6]	Exports	Imports (For Consumption)	Reexports	Consumption by Primary Consumer Groups (Gross Weight)				Consumer Stocks, Dec. 31				$ Per Metric Ton	
						Total	Metallurgical	Refractory	Chemical	Metallurgical	Refractory	Chemical	Total Stocks	South Africa[2]	Turkish[4]
1981	90		71	898	67	889	503	148	238	230	128	370	728	55	110
1982	85		8	507	57	558	283	80	195	120	113	313	546	52	110
1983	76		11	190	5	320	64	72	184	140	76	239	456	52	110
1984	80		55	305	4	512	226	97	189	24	70	233	327	52	110
1985[7]	75	100	91	376	3	508	449	59	[5]	228	44	[5]	272	42	125
1986	79	95	84	443	1	388	342	45	[5]	249	35	[5]	285	42	125
1987	75	107	9	313	5	506	459	48	[5]	309	23	[5]	332	46	115
1988	78	120	14	450	1	551	495	56	[5]	366	23	[5]	390	56	180
1989	78	147	25	379	2	561	517	44	[5]	368	24	[5]	392	65	185
1990[3]	79	135	14	346		550							350	55	135
1991[3]	80		10	320										50	130

[1] Preliminary. [2] Cr_2O_3, 44% (Transvaal). [3] Estimate. [4] 48% $Cr_2$03. [5] Included in metalurgical. [6] Chromiom content. [7] Data prior to 1985 are in thousands of short tons. *Source: Bureau of Mines* T.82

Coal

U.S. coal production was expected to fall 2.3 percent in 1991 to 1.005 billion short tons from the record 1.029 billion mined in 1990, according to the Department of Energy. The principal market for U.S. coal is electric power generation. In 1991, coal was used to generate 55 percent of the electricity produced in the U.S. In turn, 77.8 percent of the coal produced in the U.S., or 782 million tons, was used by electric utilities.

Coal production was forecast to rise to 1.032 billion tons in 1992, of which 816 million tons was expected to be used to generate electricity.

The Clean Air Act favors use of low-sulfur coal, defined as coal that emits less than 1.2 pounds of sulfur per million Btu of energy content. Most of that coal comes from Western mines. Eastern coal tends to have higher energy content, but more sulfur. Power plants using high-sulfur coal will be forced to switch to low-sulfur coal, or install scrubbers, or convert to natural gas, or else shut down by the year 2000.

The U.S. exported 103 million tons in 1991, down from 105.8 million in 1990. Steam coal exports declined, while metallurgical coal exports increased marginally. Metallurgical coal, used to make coke for steel production, accounts for about 10 percent of U.S. production, and for more than half of all U.S. exports. The leading metallurgical coal buyers are Japan, Western Europe, Brazil and Canada.

Domestic coke plants consumed 34 million tons in 1991, down 14.6 percent from 38 million in 1990.

World Production of All Coal[3] In Millions of Metric Tons

Year	Australia	East Germany	Canada	Czechoslovakia	Turkey	West Germany	Greece	India	Spain	China	Poland	South Africa	United Kingdom	United States	U.S.S.R.	Yugoslavia
1987	386	309	612	128	44	191	42	185	35	8,989	265	177	104	833	760	60
1988[1]	356	310	706	126	42	188	49	197	31	9,465	267	178	104	862	771	59
1989[1]		301	706	119	62	188	52	212	36	10,206	242	173	100	760	740	68

[1] Estimate. [2] Preliminary. [3] Includes anthracite, subanthracite, bituminous, subbituminous, lignite & brown coal. *Source: United Nations.* T.83

Bituminous Coal Production[1] in the United States In Millions of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1988	75.4	76.8	84.0	75.4	74.0	76.4	69.2	88.2	83.3	80.9	83.0	80.3	946.7
1989	82.0	75.1	89.1	77.2	82.5	78.5	66.4	91.0	84.8	89.6	87.0	74.1	977.4
1990[2]	90.3	81.8	91.4	82.9	86.5	84.6	79.8	91.8	83.1	93.4	86.8	75.7	1,029.0
1991[2]	85.8	82.6	84.8	81.1	81.6	78.5	81.6						

[1] Includes small amount of lignite. [2] Preliminary. *Source: Bureau of Mines* T.88

U.S. Stocks of Bituminous Coal for All Industrial & Retail Dealers, at End of Month In Million Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1988	170.6	166.9	168.4	171.4	171.8	166.5	153.4	146.4	147.7	151.9	154.9	158.4
1989	146.5	141.4	142.6	148.2	154.5	152.4		145.0	147.2	153.4	157.8	146.1
1990[1]	148.7	153.9	161.4	167.0	172.7	172.0	164.2	161.6	160.7	167.0	171.8	167.2
1991[1]												

[1] Preliminary. *Source: Bureau of Mines* T.87

Pennsylvania Anthracite Coal Production[1] In Thousands of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1988	221	275	287	272	304	290	253	370	324	388	310	260	3,555
1989	286	287	343	278	285	261	196	310	299	298	272	233	3,348
1990[1]	244	227	266	246	329	327	277	345	323	354	310	183	3,121
1991[1]	210	206	220	221	216	226	193						

[1] Represents production in Pennsylvania only. Production outside which is small, is included in Bituminous Production series. [2] Preliminary. *Source: Bureau of Mines* T.92

Average U.S. Price of Coal In Dollars per Short Ton

Year	End-Use Sector Electric Utilities	Coke Plants	Other Industrial[2]	Ex[3] ports	Im[3] ports	Year	End-Use Sector Electric Utilities	Coke Plants	Other Industrial[2]	Ex[3] ports	Im-[3] ports
1984	35.12	56.58	39.29	50.72	35.37	1989	30.12	47.50	33.03	42.52	34.14
1985	34.53	54.30	37.21	48.18	36.04	1990[4]				42.63	34.45
1986	33.30	50.83	35.84	45.95	36.02	1991					

[1] Based on the cost including insurance & freight (C.I.F. cost). [2] Manufacturing plants only. [3] Based on the free alongside ship (F.A.S.) value. [4] Estimate. *Source: Energy Information Administration* *T.90*

Salient Statistics of the Bituminous Coal Industry in the United States

Year	Production: Underground (Millions Net Tons)	Production: Surface (Millions Net Tons)	Production: Total Production (Millions Net Tons)	Value: Total Million $	Value: Avg. Per Ton $	Number of Mines	Thous. of Men Employed	Avg. Tons Per Miner Per Hour: Underground	Avg. Tons Per Miner Per Hour: Surface	Avg. Tons Per Miner Per Hour: Total	Imports	All Coal[3] Exports to: Grand Total (Thousands of Short Tons)	Canada	Europe	Asia
1983	299.9	478.1	778.0	20,111	25.85	4,265	173.5	1.62	3.87	2.52	1,271	76,870	16,809	32,979	21,895
1984	351.5	540.3	891.8	22,750	25.51	4,902	175.7	1.72	4.10	2.65	1,286	80,793	20,140	32,766	21,306
1985	350.1	528.9	878.9	22,060	25.10	4,547	167.0	1.79	4.32	2.76	1,952	92,680	16,393	45,106	22,343
1986	359.8	526.2	886.0	20,998	23.70	4,203	152.7	2.00	4.69	3.04	2,212	85,518	14,478	42,552	19,639
1987	372.2	543.0	915.2	21,050	23.00	3,894	141.1	2.21	5.06	3.32	1,747	79,607	16,227	34,159	20,206
1988	381.5	565.2	946.7	20,827	22.00	3,654	133.9	2.38	5.41	3.58	2,134	95,023	19,232	45,137	23,075
1989[1]	393.3	584.1	977.4	21,268	21.76	3,429	130.1	2.46	5.70	3.73	2,851	100,815	16,777	51,604	22,734
1990[2]	424.1	601.4	1,025.6	22,266	21.71	3,243	129.6	2.54	6.07	3.86	2,699	105,804	15,511	58,382	22,725

[1] Preliminary. [2] Estimate. [3] Prior to 1985 data is just for bituminous coal. *Source: Energy Information Administration* T.84

United States Production of Coal by Principal States In Millions of Short Tons

Year	Anthracite Pennsylvania	Bituminous: Alabama	Colorado	Illinois	Indiana	Kentucky	Montana	Ohio	Pennsylvania	Virginia	West Virginia	Texas	Wyoming	Total Bituminous	Total U.S.
1983	4.1	23.8	16.7	56.8	31.8	131.2	28.9	33.8	65.7	35.0	115.0	38.9	112.2	778.0	782.1
1984	4.2	27.1	18.0	63.8	37.6	159.5	33.0	39.3	73.3	40.4	131.0	41.1	130.9	891.8	895.9
1985	4.7	27.8	17.2	59.2	33.3	152.3	33.3	35.6	66.7	40.9	127.8	45.5	140.7	878.9	883.6
1986	4.3	25.8	15.2	61.9	32.9	153.9	34.0	36.4	67.4	41.2	129.9	48.6	136.8	886.0	890.3
1987	3.6	25.5	14.4	59.2	34.2	165.2	34.4	35.8	66.9	44.5	136.7	50.5	146.9	915.2	918.8
1988	3.6	26.5	15.9	58.6	31.3	157.9	38.9	34.0	67.1	45.9	145.0	52.3	164.0	946.7	950.3
1989[2]	3.3	28.0	17.1	59.3	33.6	167.4	37.7	33.7	67.2	43.0	153.6	53.9	171.6	977.4	980.7
1990[1]	3.5	29.1	19.2	60.3	37.8	170.8	37.0	35.2	70.7	50.0	167.6	56.5	185.8	1,082.7	1,029.1
1991[1]	3.1							993.7							996.8

[1] Estimate. [2] Preliminary. *Source: Bureau of Mines* T.85

U.S. Consumption & Stocks of Total Coal In Millions of Short Tons

Year	Stocks—Dec. 31: Electric Power Utilities	Oven Coke Plants	Steel & Rolling Mills	Other Industrials	Producers & Distrib.	Total	Consumption: Electric Power Utilities	Coke Plants: Beehive	Coke Plants: Ovens	Steel & Rolling Mills	Other Industrials	Retail Deliveries[2]	Total
1983	155.6	4.3	8.7		33.9	202.6	625.2	37.0		66.0		8.4	736.7
1984	179.7	6.2	11.3		34.1	231.3	664.4	44.0		73.7		9.1	791.3
1985	156.4	3.4	10.4		33.1	203.4	693.8	41.1		75.4		7.8	818.0
1986	161.8	3.0	10.4		32.1	207.3	685.1	36.0		75.6		7.7	804.3
1987	170.8	3.9	10.8		28.3	213.8	717.9	37.0		75.2		6.9	836.9
1988	146.5	3.1	8.8		30.4	188.8	758.4	41.9		76.3		7.1	883.7
1989[1]	135.9	2.9	7.4		29.0	175.1	766.9	41.4		76.1		6.2	889.5
1990[3]	155.2	3.3	8.7		33.4	200.6	771.7	38.9		76.3		6.7	894.6
1991[3]	156.1	3.3	8.8		33.0	201.2	781	34		75		6.8	897

[1] Preliminary. [2] To other consumers. (Residential & Commercial) [3] Estimate. *Source: Energy Information Administration* T.86

Statistical Trends in the Pennsylvania Anthracite Industry

Year	Production (Millions of Net Tons): Total	Surface	Underground	Value of Production Million $	Avg. Value Per Net Ton	Stocks (Dec. 31): Electric Utilities	Prod. & Distrib.	Exports to: Total (1,000 Short Tons)	Canada	France	Netherlands	South Korea	Apparent Consumption	Avg. No. of Men Working Daily (1,000)	Number of Mines	Avg. Tons Per Miner Per Hr.
1983	4.1	3.6	.5	214.4	52.29	6,507	498	776	296	58	30	357	2,823	2.1	224	1.01
1984	4.2	3.6	.6	202.5	48.22	6,710	565	680	301	—	52	292	3,088	2.1	149	1.02
1985	4.7	4.0	.7	215.3	45.80	7,189	416	1,286	277	19	32	535	2,917	2.3	217	1.05
1986	4.3	3.7	.6	189.7	44.12	7,099	512	1,460	437	—	8	868	2,533	2.0	221	1.03
1987	3.6	2.9	.6	157.1	43.65	6,940	537	1,180	445	—	—	643	2,604	1.6	200	1.13
1988[1]	3.6	2.9	.6	159.0	44.16			901	506	—	—	266		1.5	206	1.21
1989[2]	3.3	2.8	.5	141.7	42.93									1.4	191	1.12
1990[2]	3.5	3.1	.4	150.3	39.40										187	1.03

[1] Preliminary. [2] Estimate. *Source: Energy Information Administration* T.91

Cobalt

Cobalt continued 1991 where it left off in 1990, in a bull market that by year's end lifted prices to $30.00 a pound on the European market. Unrest in Zaire, the world's largest producer, sent buyers scrambling to take as much metal as they could, in anticipation of further price hikes in 1992.

Zaire's production, estimated to be 20,000 tonnes for 1990, was down to 17,000 in 1991. The country's shipments, which were running at around 1,200 tonnes a month through July 1991, slowed dramatically to around 500 tonnes a month afterwards.

The price surge in early November came after officials of Zaire's state-owned mining corporation, Gecamines, were reported to have suspended shipments, due to the country's mounting political problems. While this was later denied, the market remained nervous, and prices did not pull back to any appreciable degree.

The U.S. does not produce any cobalt, and imports the great bulk of its material from Zaire and Zambia. For the first seven months of 1991, the U.S. consumed a total of 3,935 tonnes of cobalt, made up of 1,892 tonnes of metal, 1,110 tonnes of oxides and other chemical compounds, and 933 tonnes of cobalt scrap.

For all of 1990, U.S. cobalt consumption totaled 6,915 tonnes, consisting of 3,596 tonnes of metal, 2,095 tonnes of oxide and other chemicals, and 1,225 tonnes of cobalt scrap. Better cobalt prices made scrap recovery more economically appealing.

The greatest use of cobalt is in superalloys, many of which are used in the manufacture of jet aircraft engines. When added to other metals, cobalt reduces weight and adds strength. For the first seven months of 1991, superalloys consumed 1,680 tonnes of cobalt in the U.S., compared with 1990's same-period usage of 1,793 tonnes. This was followed by 1,073 tonnes for unspecified and miscellaneous use, compared with 1990's same-period utilization of 1,028 tonnes. Most of this unspecified demand is for experimental alloy use.

At 1990's end, U.S. cobalt stocks were 1,827 tonnes, and by July 1991 they were down to 1,340 tonnes.

For the first six months of 1991, the U.S. imported 3.27 million kilograms of total cobalt content, compared with full-year 1990 imports of 6.341 million kilograms. With the slowdown in Zaire's exports in late 1991, the full-year 1991 figure was expected to decline from 1990's total.

Zambia was the leading cobalt supplier to the U.S. in first-half 1991, providing 847,433 kilograms, followed by Canada with 741,797 kilograms, and Zaire with 637,226.

World Mine Production of Cobalt In Metric Tons[4] of Cobalt Content

Year	Albania[3]	Australia[3]	Botswana	Brazil	Canada	Cuba[3]	Finland (Refinery)	France (Refinery)	Japan (Refinery)	New Caledonia[3]	Norway (Refinery)	Philippines[3]	South Africa	USSR	Zaire	Zambia	World Total
1982	900	1,631	559	N.A.	1,548	1,653	1,141	626	2,141	299	1,092	514	1,500	2,550	12,450	3,584	27,081
1983	1,000	1,270	491	260	1,459	1,787	1,709	144	1,511	440	969	182	1,500	4,850	5,908	2,653	19,935
1984	1,300	1,190	570	220	2,340	1,540	1,602	128	998	550	1,313	71	1,500	5,200	10,003	3,827	26,045
1985[4]	600	1,134	222	100	2,067	1,490	1,427	124	1,276	675	1,637	911	690	2,700	29,200	6,773	47,374
1986	600	1,237	163	150	2,297	1,553	1,348	158	1,338	700	1,574	92	690	2,800	33,373	5,869	50,199
1987	600	1,261	181	150	2,490	1,566	980	136	124	750	1,576	—	720	2,800	22,517	7,365	40,902
1988	600	1,200	291	150	2,398	1,752	1,132	176	109	800	1,951	—	720	2,850	25,400	7,090	43,608
1989	600	1,000	275	200	2,694	2,000	1,295	180	99	800	1,946	—	730	2,850	25,000	7,000	43,360
1990[1]	600	1,000			2,291	1,600	—			800		—		2,400	20,000	7,100	37,136
1991[1]	600	1,000			2,300	1,600	—			800		—		2,400	17,000	7,000	34,100

[1] Estimate [2] Preliminary [3] Metal content [4] Data prior to 1985 are for short tons *Source: Bureau of Mines* T.93

U.S. Salient Statistics of Cobalt In Metric Tons of Contained Cobalt

Year	Net Import Reliance as a % of Apparent Consumption	Cobalt Secondary Production	Processors & Consumer Stocks Dec. 31	Imports for Consumption	Consumption By End Uses												
					Ground Coat Frit	Stainless & Heat Resisting	Catalysts	Super-Alloys	Tool Steel	Magnetic Alloys	Pigments	Drier in Paints, etc.[4]	Cutting & Wear-Resistant Mater.	Feed or Nutritive Additive	Total (Apparent)	Price $ Per Pound[3]
1982	92	2,863	1,327	12,870		51	789	3,319	161	1,544		1,114	638		9,468	8.56
1983	95	3,232	1,441	17,221		54	1,064	4,034	248	1,711		1,503	666		11,319	5.76
1984	95	3,499	1,368	25,310		74	1,296	4,766	353	2,209		1,258	831		12,994	10.40
1985[5]	94	407	1,273	8,032	328	28	497	2,418	92	660	182	517	566	21	7,118	11.43
1986	84	1,196	1,355	5,574	350	34	656	2,924	116	699	210	674	518	21	7,649	7.49
1987	87	1,025	2,043	8,832	360	26	497	2,873	174	666	258	799	654	24	7,986	6.56
1988	87	1,018	1,766	7,051	332	26	617	2,887	180	869	378	892	704	26	7,824	7.09
1989	83	1,184	1,439	6,157	352	74	819	2,813	219	861	319	718	654	35	7,164	7.64
1990[1]	84	1,225	1,400	6,671											7,885	10.09
1991[2]	82	1,300		6,400											7,300	15.00

[1] Preliminary [2] Estimate [3] Annual spot for cathodes [4] Or related usage [5] Data prior to 1985 are for thousands of pounds *Source: Bureau of Mines* T.94

Cocoa

After years of suffering through supply and demand surpluses, the cocoa market saw a light at the end of the bearish price tunnel in 1991. For the first time in seven years, a stock drawdown of 70,000 tonnes in 1991/92 was forecast. This came on the heels of 1990/91's 125,000-tonne surplus and was the main reason for firmer world cocoa prices in late 1991.

World cocoa bean production for the 1991/92 (Oct.-Sept.) crop year was forecast by the USDA at 2.35 million tonnes. This was four percent below the estimated production of 1990/91. After years of surplus-driven bear markets, low prices received by the world's cocoa farmers took their toll, and reduced agricultural practices, combined with poor weather and unstable political conditions in a number of producing countries, led to a sharp decrease in output.

However, the cocoa market still labored under the handicap of heavy stocks in consuming countries. More than seven months of cocoa supplies were in the hands of consumers. In addition to inventories held by cocoa grinders, the buffer stock of the International Cocoa Organization (ICCO) held an estimated 245,000 tonnes of cocoa.

For the past five years, most Western nations have seen an increase in per capita cocoa consumption. World grindings were forecast to increase by 4 percent in 1991/92 to a record 2.4 million tonnes. Most experts agreed that if the former Eastern Bloc were stable, world cocoa consumption would be showing an even sharper gain. However, due to the upheaval in the former Soviet Union and elsewhere in Eastern Europe, cocoa grinds in those nations were cut back severely.

The efforts of cocoa producers to reinstitute the ICCO in 1991 were largely unsuccessful. At a late-year meeting in London, little progress was made to reestablish the agreement that once held sway over the world's cocoa trade. Producer arrears of more than $152 million and a reluctance on the part of consumers to be tied to a quota system were the major stumbling blocks. Many delegates were of the opinion that the cocoa market had already gone through the worst and that an agreement was not needed in a self-correcting free market.

Over recent years, the cocoa market has seen a marked increase in new production coming on stream from Southeast Asia. Malaysia and Indonesia had fairly small crops at the beginning of the 1980s, but now are major producers of cocoa for the world market. In 1990/91, Malaysian production was estimated at 220,000 tonnes, and predictions for 1991/92 centered on 230,000 tonnes.

Indonesia was seen as the one country that in 1991/92 had a chance for significant increases in production. The country's output was expected to rise to 170,000 tonnes from 1990/91's 140,000 tonnes.

West Africa, and notably Cote D'Ivoire, is the world's largest cocoa-producing region. The Cote D'Ivoire crop for 1990/91 was estimated to have been 785,000 tonnes. Due to poor development of the crop in 1991/92, the total was expected to decline to 750,000 tonnes. Ghana, Nigeria and Cameroon are other major producers. Political problems, poor weather, and a lack of proper husbandry have resulted in crop declines in those nations.

After the Cote D'Ivoire, Brazil is the largest cocoa producer. The 1990/91 Brazil main crop, or Bahia cocoa production, totaled 3.64 million bags, with mid-crop or temporao output totaling about 2.1 million bags. This low mid-crop total reflected reduced crop husbandry and fertilization and was a harbinger of things to come. Brazil's main-crop production in 1991/92 was expected to be only 2.2 million bags.

Germany is the world's leading cocoa grinder, followed by the U.S., the Netherlands and Brazil. The German grind during 1990/91 totaled 302,000 tonnes, up from the previous season's 273,000 tonnes. The U.S. grind in the same period amounted to 285,000 tonnes, against 1989/90's 275,000 tonnes. The Dutch grind also showed gains, rising from 241,000 tonnes in 1989/90 to 270,000 in 1990/91. Continuing the trend, Brazil's grind, unusually large for a producing nation, was up to 276,000 tonnes from 1989/90's 235,000 tonnes.

Futures Markets

Cocoa futures are traded on the Coffee, Sugar, and Cocoa Exchange (CSCE) in New York and on the London Terminal Market. Options are traded on the CSCE and the London Futures and Options Exchange.

World Cocoa Supply and Demand In Thousands of Metric Tons

Crop Year[1]	Stocks Oct. 1	Net World Crop[2]	Total Availability	Seasonal Grindings	Closing Stocks	Stock Change	Crop Year[1]	Stocks Oct. 1	Net World Crop[2]	Total Availability	Seasonal Grindings	Closing Stocks	Stock Change
1979–0	414	1,614	2,028	1,476	552	+138	1986–7	617	1,981	2,598	1,906	692	+ 75
1980–1	552	1,678	2,213	1,573	640	+ 88	1987–8	692	2,177	2,869	1,998	871	+179
1981–2	640	1,716	2,356	1,599	757	+117	1988–9	871	2,446	3,317	2,125	1,192	+321
1982–3	757	1,535	2,292	1,637	655	−102	1989–90	1,192	2,396	3,588	2,204	1,384	+192
1983–4	655	1,526	2,181	1,718	463	−192	1990–1[3]	1,384	2,435	3,820	2,333	1,486	+102
1984–5	463	1,923	2,386	1,848	538	+ 75	1991–2[3]	1,486	2,300	3,786	2,448	1,338	−148
1985–6	538	1,946	2,484	1,867	617	+ 79	1992–3[4]						

[1] Crop year season is Oct.–Sept. [2] The Net World Crop is obtained by adjusting the Gross World Crop for one percent loss in weight. [3] Preliminary. [4] Forecast. *Source: Gill and Duffus, Ltd.*

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World Production of Cocoa Beans in Principal Producing Countries In Thousands of Metric Tons

Crop Year (Oct.–Sept.)	Brazil	Cameroon	Colombia	Dominican Rep.	Ecuador	Equatorial Guinea[1]	Ghana	Indonesia	Ivory Coast	Malaysia	Mexico	Papua New Guinea	Nigeria	Sierra Leone	Togo	Venezuela	World Total
1980–1	351	120	36	33	85	8	258	13	417	49	30	27	160	10	16	14	1,694
1981–2	315	120	39	43	88	8	225	17	465	61	41	29	183	9	11	15	1,737
1982–3	339	106	40	43	55	9	179	20	360	68	34	29	160	10	10	15	1,545
1983–4	309	109	41	42	55	9	159	23	411	90	35	28	125	9	21	12	1,545
1984–5	415	120	42	39	128	9	175	32	565	100	42	31	170	11	7	11	1,967
1985–6	380	119	46	39	112	9	219	40	555	130	39	33	130	9	13	11	1,952
1986–7	365	123	52	45	77	7	228	51	619	167	38	34	100	8	16	14	2,013
1987–8	400	133	54	50	76	8	187	70	674	227	48	35	145	9	12	13	2,213
1988–9	334	124	56	44	82	7	301	98	849	225	41	48	160	8	10	12	2,471
1989–0	356	117	58	57	100	8	295	120	710	240	39	41	155	6	7	14	2,395
1990–1[3]	375	100	60	40	95	8	295	125	780	230	39	40	160	6	7	17	2,450
1991–2[2]	335	95	61	47	80	8	280	130	725	245	39	40	165	5	8	17	2,354

[1] Includes Fernando Po & Rio Muni. [2] Forecast. [3] Preliminary. *Sources: Foreign Agricultural Service; U.S.D.A.* T.96

World Absorption (Consumption) of Cocoa[2] In Thousands of Metric Tons

Crop Year	Japan	Singapore	Belgium	Brazil	Canada	China	Colombia	France	W. Germany	Netherlands	Spain	Italy	Switzerland	USSR	United King.	United States	World Total
1980	25	4	23	200	12	15	31	48	158	133	35	34	17	130	62	137	1,512
1981	29	4	29	195	17	15	35	52	167	141	37	35	18	120	80	186	1,600
1982	32	28	29	170	16	15	38	52	175	148	37	39	18	130	89	196	1,607
1983	34	20	33	198	16	10	39	53	180	157	38	36	18	145	78	191	1,656
1984	34	23	36	214	22	12	33	52	194	161	35	40	19	150	87	215	1,753
1985	34	29	36	247	21	7	39	42	207	167	39	47	20	155	95	202	1,857
1986	36	38	35	236	20	27	41	39	201	183	39	40	22	164	83	193	1,879
1987	39	45	35	236	21	16	46	40	225	215	43	46	19	132	94	228	1,997
1988	40	45	41	201	22	18	41	44	244	234	40	46	22	201	100	241	2,122
1989	41	49	50	226	24	19	47	59	273	241	44	51	22	106	112	237	2,193
1990	43	49	52	238	25	19	48	62	305	256	46	50	23	80	120	275	2,277
1991[3]	42	48	50	276	25	22	48	70	302	270	44	62	23	75	134	285	2,333

[1] Preliminary. [2] Figures represent the "absorption," "disappearance" or "grindings" of cocoa beans in each country—in other words, net imports of cocoa beans adjusted for changes in stock. [3] Estimate. *Source: Gill & Duffus, Ltd.* T.98

Raw Cocoa Grindings in Selected Countries In Thousands of Metric Tons

Year	Total	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
	France					Germany					Holland				
1981	47.0	12.6	12.0	9.6	12.9	159.4	41.7	37.6	35.4	44.7	141.0	36.0	34.3	32.7	38.0
1982	45.5	13.1	12.3	9.7	10.4	167.0	45.1	39.9	35.8	46.3	148.4	38.4	34.9	33.7	41.3
1983	47.6	12.2	12.9	10.9	11.7	179.5	45.7	41.0	43.0	49.8	156.9	40.5	37.9	35.2	43.4
1984	47.2	14.0	12.5	11.1	9.7	193.5	49.9	48.6	42.4	52.6	161.4	44.4	40.0	35.0	42.1
1985	42.5	12.4	10.6	8.3	11.2	206.8	57.0	51.7	44.0	54.0	167.4	44.6	41.7	37.0	44.1
1986	39.4	10.9	10.6	8.2	9.7	201.0	53.6	50.6	42.6	54.2	182.6	46.2	45.1	40.3	51.0
1987	37.8	9.9	9.0	9.2	9.7	208.7	55.2	49.2	46.4	57.8	195.6	49.1	47.3	42.8	56.3
1988	37.1	10.0	8.6	8.8	9.8	232.8	60.0	54.0	53.0	65.8	216.5	56.1	51.7	50.5	58.2
1989[1]	46.0					246.0	62.0	59.2	57.0	67.8	233.5	61.1	56.4	55.1	60.9
1990						281.1	69.0	64.0	71.0	77.1	247.6	62.2	58.8	58.7	67.8
	Italy					United Kingdom					United States				
1981	35.1	8.6	8.1	5.8	12.6	85.3	21.7	21.3	19.2	23.1	190.2	48.4	46.0	48.8	47.1
1982	39.2	9.6	10.1	6.0	13.6	88.1	25.3	21.1	19.6	22.1	199.1	47.7	50.6	50.1	50.7
1983	36.4	8.4	7.9	8.1	12.0	76.7	19.8	18.1	17.4	21.3	193.6	45.9	46.7	47.8	53.2
1984	39.8	8.0	5.6	9.8	16.5	89.6	22.3	21.9	21.1	24.2	164.4	42.4	41.6	40.9	39.5
1985	47.4	11.1	10.5	8.8	17.0	91.3	26.5	24.5	20.0	20.3	153.8	39.0	37.5	40.5	36.8
1986	39.8	10.9	9.1	7.8	12.0	87.2	21.1	22.0	20.1	24.0	153.6	33.8	37.0	42.3	40.6
1987	44.2	11.3	9.8	9.9	13.2	95.1	24.5	22.9	22.4	25.3	180.8	39.7	45.9	49.9	45.4
1988	46.9	11.8	10.1	11.3	13.7	100.5	26.3	25.0	22.4	26.8	186.9	45.2	47.3	48.4	46.0
1989[1]		9.8	11.3	11.2		114.6	28.5	30.1	26.9	29.2	192.8	43.8	49.2	47.0	52.8
1990						124.8	32.1	29.3	29.4	33.9	216.7	51.6	51.7	58.3	55.2
1991							33.5	34.1	32.9			51.2	64.4	66.5	

[1] Preliminary. *Source: Gill and Duffus, Ltd.* T.97

Imports of Cocoa Butter—Selected Countries In Metric Tons

Year	Greece	Australia	Austria	Belgium	Canada	Finland	France	West Germany	Italy	Japan	Netherlands	Norway	Sweden	Switzerland	UK	USA	USSR
1980	1,689	4,532	2,485	12,388	3,717	2,057	14,285	22,790	1,211	6,264	16,445	1,855	4,155	9,117	29,597	34,658	—
1981	1,633	4,410	3,461	11,960	4,505	2,228	14,170	29,358	1,667	10,352	11,021	1,875	4,234	10,208	19,549	43,196	—
1982	1,859	5,419	3,382	12,281	4,860	2,333	14,008	30,564	1,631	10,615	16,225	2,083	4,451	9,982	25,820	37,325	—
1983	1,788	6,067	3,535	12,128	5,313	2,428	16,690	30,581	2,151	9,947	20,224	1,892	4,704	10,224	31,581	47,981	
1984	1,561	6,445	3,763	13,451	5,437	2,156	17,325	35,241	2,337	8,436	25,072	2,139	5,103	9,798	30,203	51,711	4,200
1985	1,225	8,538	3,682	15,416	5,535	2,039	19,908	33,378	3,056	8,632	24,595	1,957	4,929	11,175	31,372	70,146	7,150
1986	1,457	8,204	4,387	13,793	5,377	1,966	19,397	25,513	3,246	8,474	14,925	2,295	4,866	11,369	32,669	70,264	3,450
1987	1,860	8,370	3,879	14,312	5,833	1,971	23,704	27,436	3,509	9,330	16,152	2,734	5,272	11,932	29,689	79,773	1,000
1988	2,812	9,405	4,315	12,869	7,371	2,246	24,562	33,590	4,731	12,497	20,431	2,523	5,596	12,821	34,329	78,285	N.A.
1989	2,806	9,700	4,599	17,748	8,224	2,469	26,597	41,765	5,932	15,280	22,924	2,706	5,735	16,276	35,045	64,353	2,500
1990[1]	3,386	8,390	6,047	21,121	8,830	2,536	28,539	49,999	6,885	15,686	34,529	2,897	5,855	16,306	34,604	92,165	N.A.
1991[2]	2,868	1,387	N.A.	N.A.	7,932	2,430	27,648	56,119	5,916	18,891	34,046	3,360	6,895	16,352	29,532	93,080	N.A.

[1] Preliminary. [2] Estimate. *Source: Gill & Duffus Group PLC* T.97a

Imports of Cocoa Liquor and Cocoa Powder (Selected Countries) In Metric Tons

	Cocoa Liquor							Cocoa Powder								
Year	France	West Germany	Netherlands	Japan	UK	USA	USSR	Belgium	France	West Germany	Italy	Japan	Netherlands	Sweden	UK	USA
1980	15,688	1,922	7,634	2,927	1,928	43,796	5,200	3,335	5,905	10,693	6,142	2,656	3,018	3,457	1,885	65,606
1981	15,457	2,151	9,262	3,499	1,914	33,109	16,000	3,503	7,963	12,935	6,478	2,616	3,255	3,551	2,393	77,879
1982	13,871	2,196	13,519	3,684	2,283	31,419	8,700	3,770	7,609	13,524	6,673	2,832	2,974	3,872	3,284	60,563
1983	15,164	2,288	14,216	4,303	3,829	45,477	15,425	3,895	8,527	13,886	7,964	3,157	3,009	3,806	3,014	78,968
1984	20,268	3,075	13,622	2,928	2,184	45,547	32,000	4,204	9,652	13,554	7,462	3,260	3,574	3,996	3,654	89,978
1985	24,031	3,570	14,822	2,792	3,400	53,042	37,510	4,586	8,269	16,624	8,313	3,841	4,669	3,928	2,591	81,775
1986	28,426	2,006	10,915	3,346	4,091	50,705	30,110	4,844	8,984	15,654	9,059	4,844	4,669	3,980	3,258	89,454
1987	31,171	391	8,805	3,402	1,870	38,105	21,680	5,229	8,967	16,989	9,330	5,517	3,624	3,982	3,897	103,455
1988	31,157	793	9,014	3,445	3,022	34,454	21,000	5,572	9,750	16,453	9,498	6,470	3,432	4,330	3,576	91,357
1989	29,257	1,040	9,315	3,451	2,524	27,556	31,504	6,138	10,920	18,470	10,233	6,281	5,862	4,125	3,255	53,736
1990[1]	35,146	1,860	9,875	3,123	1,713	25,047	N.A.	6,476	12,244	21,294	N.A.	6,033	6,446	4,357	3,619	58,280
1991[2]	41,630	1,769	10,728	6,880	1,502	21,960	N.A.	N.A.	13,568	26,112	N.A.	6,336	5,873	4,699	4,710	51,394

[1] Preliminary. [2] Estimate. *Source: Gill & Duffus Group PLC* T.97b

United States Imports of Cocoa (Includes Shells) In Thousands of Metric Tons[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1980	11.1	9.2	8.0	19.5	15.4	12.0	16.9	9.6	8.2	9.6	9.4	19.9	148.5
1981	13.5	27.8	19.2	30.4	27.1	24.1	19.3	22.0	20.3	24.1	5.8	11.5	245.0
1982	10.0	29.0	17.6	15.3	16.8	11.9	13.0	20.3	14.3	14.4	14.4	17.4	194.2
1983	46.0	42.7	19.0	36.4	14.4	11.1	9.6	7.2	6.1	5.3	7.7	8.2	213.7
1984[2]	15.5	21.3	28.6	16.9	24.7	15.3	13.3	10.8	10.4	5.0	10.8	18.2	190.5
1985	42.9	44.4	39.7	10.1	31.0	15.8	14.1	12.7	11.1	10.4	12.8	25.4	270.4
1986	29.9	17.4	15.3	9.4	19.3	16.4	21.5	22.9	12.0	7.9	15.1	17.5	204.7
1987	26.5	28.4	23.2	31.0	20.9	10.4	10.8	14.2	5.7	22.5	24.3	44.6	262.6
1988	27.4	30.5	27.1	18.6	14.9	21.3	14.6	19.8	8.9	8.7	13.7	31.0	236.7
1989[1]	44.2	24.0	30.4	28.9	24.6	18.4	18.1	23.4	14.0	20.4	9.5	10.4	266.1

[1] Preliminary. [2] Prior to 1984 data are in thousands of long tons. *Source: Department of Commerce* T.102

Bahia (Brazil) Crops In Thousands of Bags of 60 Kilos

Year	Total Crop Brazilian Crop Year	Temporao Brazilian Crop Year	Main Crop (Oct.-Apr.)	Temporao International Crop Year	Total Crop International Crop Year	Year	Total Crop Brazilian Crop Year	Temporao Brazilian Crop Year	Main Crop (Oct.-Apr.)	Temporao International Crop Year	Total Crop International Crop Year
1979–80	4,640	2,383	2,257	2,383	4,640	1985–86	5,674	2,774	2,901	2,774	5,674
1980–81	5,550	2,892	2,658	2,892	5,550	1986–87	5,395	1,546	3,849	1,546	5,395
1981–82	4,888	3,170	1,718	3,170	4,888	1987–88	5,933	2,485	3,448	2,485	5,933
1982–83	5,198	3,084	2,114	3,084	5,198	1988–89	4,986	2,228	2,758	2,228	4,986
1983–84	4,578	1,786	2,792	1,786	4,578	1989–90[1]	5,351	2,213	3,138	2,228	5,366
1984–85	6,370	3,126	3,244	3,126	6,370	1990–91[2]	5,611	1,971	3,640		

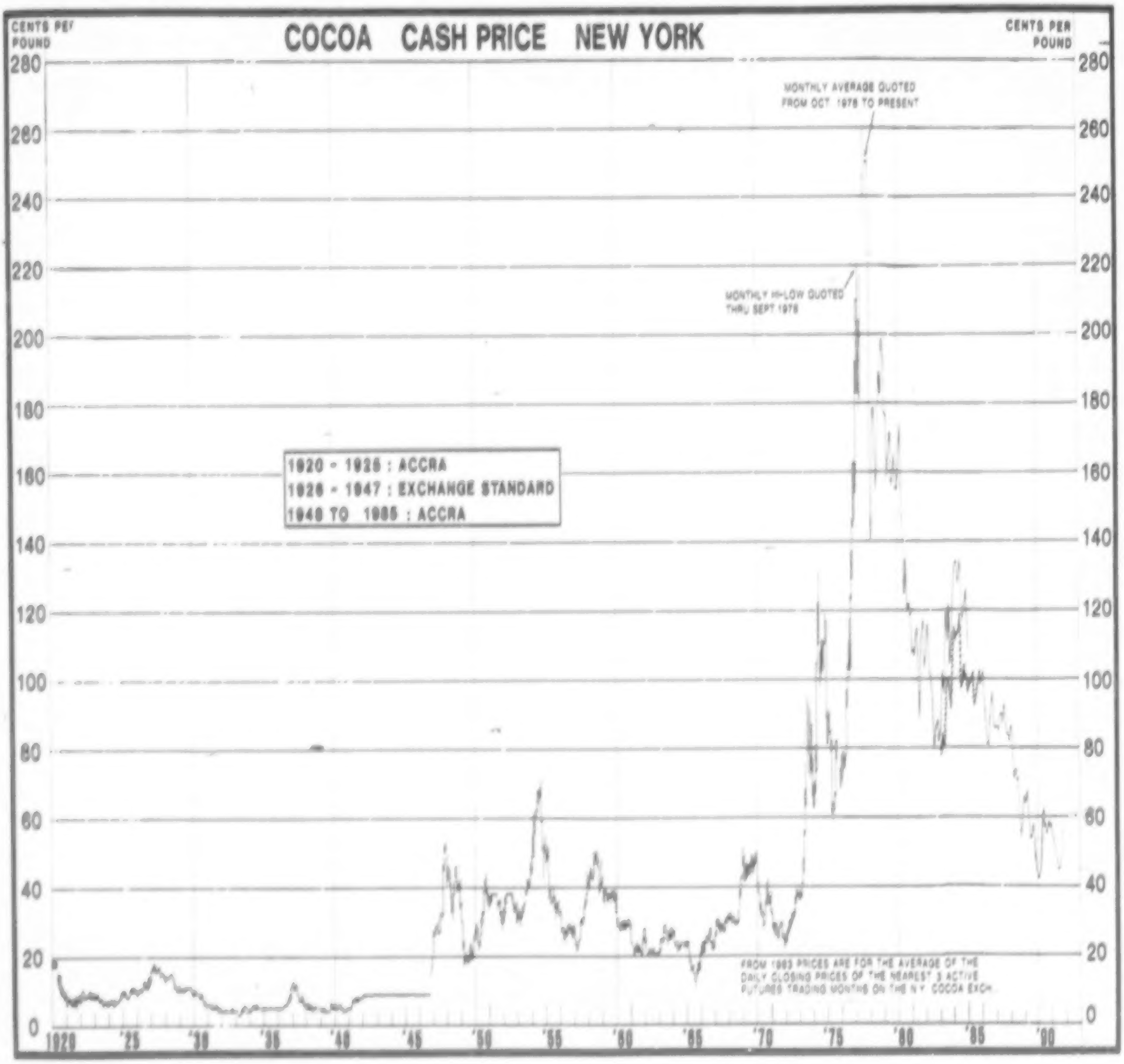
[1] Preliminary. [2] Estimate. *Source: Gill & Duffus Group PLC* T.102a

COCOA

New York Cocoa Bean Futures[1] Prices In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1980	139.1	142.4	136.0	127.9	113.5	108.6	106.2	99.3	103.6	100.9	93.7	91.2	113.5
1981	92.1	88.8	92.5	91.6	82.6	69.6	88.0	96.5	100.6	94.8	88.3	91.7	89.8
1982	95.6	89.6	83.8	75.2	73.3	66.2	66.1	66.0	71.6	70.8	64.8	69.6	74.4
1983	77.6	83.9	80.1	81.4	89.8	99.8	99.6	99.7	93.0	91.3	97.1	112.0	92.1
1984	115.2	110.8	113.0	112.8	118.8	108.2	97.1	98.6	104.3	99.8	100.6	95.5	106.2
1985	98.3	100.0	98.9	101.6	96.1	91.5	95.7	98.2	101.3	102.5	97.9	102.0	98.7
1986	100.6	95.5	91.0	84.9	81.4	81.4	87.6	89.1	95.6	90.6	87.4	85.6	89.2
1987	86.1	84.8	87.2	89.9	89.8	87.0	92.9	88.7	87.1	83.9	84.2	82.1	87.0
1988	86.3	77.9	72.6	71.2	74.3	70.9	71.2	63.1	54.0	57.7	64.4	65.9	69.1
1989	63.7	68.1	64.1	57.6	54.3	54.4	58.0	55.4	48.9	45.7	43.6	42.3	54.7
1990	43.6	45.2	49.9	58.5	63.2	57.3	58.3	55.4	59.4	56.8	57.7	55.8	55.1
1991	54.5	52.7	53.0	50.0	46.5	44.9	44.8	49.3	56.0				

[1] Avg. of the daily closing price of the nearest 3 active futures trading month converted to ¢ per lb. *Source: N.Y. Cocoa Exchange.* T.105



MONTHLY AVERAGE QUOTED FROM OCT 1978 TO PRESENT

MONTHLY HI-LOW QUOTED THRU SEPT 1978

1920 - 1925 : ACCRA
1926 - 1947 : EXCHANGE STANDARD
1948 TO 1985 : ACCRA

FROM 1983 PRICES ARE FOR THE AVERAGE OF THE DAILY CLOSING PRICES OF THE NEAREST 3 ACTIVE FUTURES TRADING MONTHS ON THE N.Y. COCOA EXCH.

Visible Stock of Cocoa in Philadelphia (Delaware River) Warehouses, at End of Month In Ths. of Bags

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct.	Nov.	Dec.
1985	221.3	282.0	333.6	420.9	416.4	389.1	315.9	323.9	320.7	316.3	289.1	280.6
1986	281.3	276.4	258.8	255.8	237.9	201.3	208.7	182.0	209.5	137.1	136.7	188.5
1987	209.8	210.8	228.9	224.1	243.6	276.2	291.4	259.7	236.6	177.9	189.6	206.3
1988	164.6	149.2	154.9	211.1	227.3	232.0	238.1	193.3	185.5	157.6	123.4	112.0
1989	86.0	67.5	88.7	96.2	114.0	112.5	100.3	100.0	54.6	46.1	51.9	53.5
1990	35.1	61.1	87.5	107.9	120.5	204.4	297.1	231.2	185.9	193.0	195.3	215.1
1991	216.2	226.9	249.3	254.9	309.2	376.8	382.8	376.8	375.5			

Source: Coffee, Sugar & Cocoa Exchange, Inc. T.107

Visible Stock of Cocoa in New York Warehouses[1], at End of Month In Thousands of Bags

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	34.7	22.0	13.2	36.4	167.8	170.9	161.3	155.7	164.6	150.6	131.8	107.1
1986	99.2	96.9	95.6	89.7	87.4	90.3	88.9	103.6	102.1	87.5	70.6	59.9
1987	51.9	43.5	40.0	39.4	55.2	46.1	58.7	43.5	49.4	44.8	107.7	149.1
1988	138.7	115.4	100.1	96.8	102.8	135.4	140.8	146.8	114.3	105.8	73.7	59.8
1989	65.0	81.9	47.3	82.2	214.8	245.3	274.2	215.6	181.3	247.7	313.6	293.5
1990	288.4	267.5	311.9	335.3	294.8	359.2	431.3	409.0	442.2	406.3	413.4	397.2
1991	355.6	219.6	295.9	294.1	250.4	292.6	313.3	317.1	271.5			

[1] In licensed & unlicensed warehouses of storage companies licensed by the Coffee, Sugar & Cocoa Exch. *Source: Coffee, Sugar & Cocoa Exch.*

U.S. Spot Cocoa Prices for Selected Origins of Cocoa Beans and Products Dollars per Metric Ton

Crop Year (Oct.–Sep.)	Cocoa Beans					Chocolate Liquor		Cocoa Butter		Cocoa Cake 10–12% Fat
	Ivory Coast	Malaysia	Brazil	Dominican Republic	Ecuadcr	Ecuador	Brazil	African	Other	
1984/85	2,433		2,407	2,197	2,239	2,784	2,919	5,331	5,276	951
1985/86	2,281		2,207	2,020	2,048	2,552	2,720	4,940	4,897	825
1986/87	2,155		2,087	1,942	1,975	2,554	2,634	4,643	4,608	965
1987/88	1,952		1,807	1,664	1,700	2,216	2,280	4,001	3,919	916
1988/89	1,773	1,364	1,669	1,442	1,466	1,912	2,136	3,543	3,515	945
1989/90	1,307	1,162	1,259	1,142	1,250	1,640	1,775	3,176	3,151	666
1990/91	1,289	1,131	1,222	1,091	1,168	1,646	1,704	3,232	3,199	394
Aug. '91	1,194	1,079	1,201	1,019	1,091	1,539	1,607	2,928	2,928	350
Sept. '91	1,355	1,225	1,384	1,174	1,248	1,759	1,870	3,309	3,317	402

Source: The Cocoa Merchants Association. All prices are nominal net ex-dock or ex-warehouse, U.S. Eastern seaboard North of Hatteras, for merchandise physically available in interstate commerce, in truckload quantities, regular commercial quality. *Foreign Agricultural Service*

Average Open Interest of Cocoa Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	23,224	24,349	26,565	26,226	21,935	21,122	21,242	19,817	19,891	20,736	19,636	17,778
1986	18,507	19,543	20,841	21,267	22,520	23,172	24,287	24,376	25,795	24,769	23,678	24,576
1987	25,412	23,578	24,541	23,372	24,869	26,115	32,859	32,063	30,946	32,643	29,666	27,674
1988	27,704	28,713	32,178	33,589	35,239	36,444	37,772	38,841	38,762	38,222	37,834	36,697
1989	36,747	35,492	32,917	36,597	41,341	45,016	47,222	45,700	42,731	46,366	48,062	49,553
1990	52,094	52,599	55,796	51,299	51,076	50,385	49,603	49,083	47,332	50,084	44,944	41,955
1991	42,446	38,205	40,198	45,250	47,764	49,111	53,153	53,886	53,974	54,854	53,390	53,412

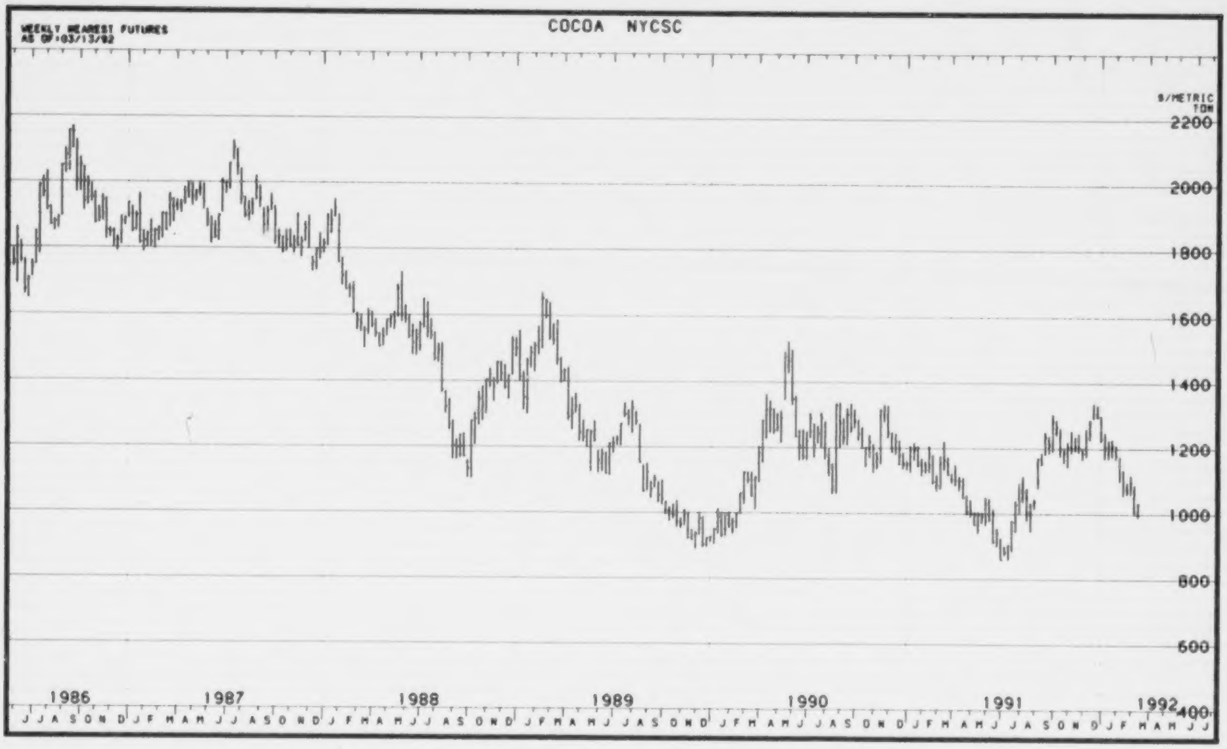
Source: Coffee, Sugar & Cocoa Exchange, Inc. T.103

Volume of Trading of Cocoa Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	86,748	83,988	94,863	72,564	64,716	62,989	74,583	57,842	52,912	58,358	53,056	37,954	800,573
1986	52,774	61,836	70,859	74,249	57,525	77,335	79,029	65,963	75,673	64,729	54,090	43,703	777,765
1987	67,268	61,641	73,341	67,954	68,521	93,849	111,728	66,990	71,591	70,164	81,605	60,813	895,465
1988	84,590	83,826	92,644	85,144	111,277	121,184	128,859	106,031	87,684	137,635	142,016	87,160	1,268,050
1989	138,883	122,374	116,082	132,208	135,783	129,943	98,922	137,879	73,741	95,531	101,152	59,352	1,341,850
1990	121,610	128,357	166,277	191,007	194,759	181,377	126,596	143,323	75,757	120,689	116,175	69,990	1,635,917
1991	94,609	92,450	104,973	99,176	76,435	104,327	96,840	146,379	104,136	135,677	106,888	72,629	1,234,519

Source: Coffee, Sugar & Cocoa Exchange, Inc. T.104

COCOA



High, Low & Closing Prices of March Cocoa Futures at New York In Dollars per Tonne

Year of Delivery	Year Prior to Delivery											Delivery Year			Life of Delivery Range
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
1984 High	2015	1958	1990	2325	2390	2460	2440	2195	2124	2272	2759	2805	2626	2645	2805
Low	1785	1790	1780	1895	2070	2055	2080	1907	1953	1967	2175	2353	2355	2425	1653
Close	1838	1835	1990	2168	2224	2369	2113	2089	1989	2224	2755	2521	2462	2617	—
1985 High	2455	2510	2500	2560	2430	2234	2305	2350	2248	2291	2133	2309	2332	2210	2602
Low	2240	2350	2343	2401	2230	1998	1990	2150	2118	2056	2034	2018	2071	1985	1985
Close	2363	2489	2435	2401	2280	2000	2275	2199	2224	2117	2052	2271	2140	2139	—
1986 High	2135	2190	2170	2105	2048	2207	2295	2392	2365	2239	2305	2315	2140	2059	2392
Low	2000	1955	2025	1980	1967	1991	2125	2170	2173	2117	2180	2118	1975	1899	1899
Close	2028	2150	2027	2041	2013	2153	2262	2336	2191	2214	2298	2146	2000	2011	—
1987 High	2283	2200	2106	1960	2007	2098	2176	2248	2076	2003	1937	1965	1884	1915	2412
Low	2148	2015	1931	1884	1825	1895	1970	2011	1920	1876	1837	1787	1797	1827	1787
Close	2165	2039	1952	1906	1904	2034	2176	2034	1927	1886	1935	1820	1857	1906	—
1988 High	2030	2043	2115	2118	2055	2180	2031	1994	1895	1930	1908	1950	1773	1600	2180
Low	1957	1980	2025	1971	1913	1986	1922	1825	1816	1794	1727	1758	1580	1500	1500
Close	2000	2033	2066	1985	2034	2021	2005	1844	1850	1866	1814	1760	1584	1502	—
1989 High	1902	1774	1712	1799	1699	1638	1520	1268	1340	1517	1536	1555	1670	1591	2088
Low	1750	1670	1625	1653	1540	1495	1251	1125	1125	1307	1371	1301	1433	1510	1125
Close	1750	1682	1705	1695	1601	1495	1254	1146	1297	1476	1500	1446	1604	1558	—
1990 High	1465	1400	1323	1280	1300	1355	1373	1164	1042	1014	972	1012	1084	1125	1538
Low	1340	1308	1208	1133	1202	1250	1090	1031	970	906	896	905	936	1055	896
Close	1393	1322	1221	1205	1272	1302	1154	1053	995	939	925	962	1071	1065	—
1991 High	1120	1260	1419	1581	1478	1393	1425	1397	1325	1385	1291	1216	1205	1175	1581
Low	1018	1083	1222	1300	1240	1270	1160	1275	1191	1200	1137	1115	1068	1075	983
Close	1120	1252	1348	1478	1304	1321	1366	1322	1213	1283	1150	1128	1110	1156	—
1992 High	1358	1338	1270	1153	1146	1147	1198	1299	1358	1316	1337				
Low	1266	1223	1115	1086	1005	997	1052	1166	1208	1218	1220				
Close	1291	1233	1136	1135	1009	1133	1140	1273	1269	1231	1245				

Source: N.Y. Coffee, Sugar & Cocoa Exchange, Inc.

T.108

Coconut Oil and Copra

Copra, dried coconut meat, is crushed or processed to yield coconut oil and copra meal. The USDA projected 1991/92 world copra output at 4.6 million tonnes, down about 3 percent from the previous season. The Philippines remained the leading copra producer, though the size of its crops varies widely, due to the vagaries of weather. The country's 1991/92 offtake was estimated at 1.9 million tonnes, down from previous estimates, and its 1990/91 crop was downgraded to 2.2 million tonnes. A series of typhoons, a drought, and an earthquake reduced production. Moreover, the country's coconut trees appear to be in a period of lower production, following a large crop in 1989/90.

Indonesia was expected to produce close to 1.4 million tonnes of copra in 1991/92. Other growers included India, Papua New Guinea and Sri Lanka.

World copra exports in 1991/92 were forecast at 290,000 tonnes, the same level as a year earlier. The Philippines remained the chief exporter of copra, and its major markets were Germany, Japan and South Korea. Papua New Guinea and the New Hebrides were also exporters.

The global copra crush was projected to be 4.5 million tonnes, down 3 percent from 1990/91, and the main processors were the Philippines and Indonesia. Smaller producers, like New Guinea and the island nations of the Pacific, sell their copra to processors in other countries. Total world stocks of copra were forecast at 100,000 tonnes in 1991/92.

Worldwide production of coconut oil was slated to be 2.8 million tonnes, down 2 percent from the 1990/91 season. The major producers were the Philippines and Indonesia. World trade in coconut oil was expected to decline 5 percent to 1.4 million tonnes. Of the total, the Philippines was anticipated to ship about 850,000 tonnes and Indonesia 175,000. Major importers of coconut oil included Germany, the Netherlands, France, the U.S., and the Soviet Commonwealth. The U.S. was likely to import over 400,000 tonnes in 1991/92.

Global consumption of coconut oil was estimated at almost 2.9 million tonnes, slightly higher than the prior season. In the U.S., most coconut oil is used for soap and other inedible purposes. Regarding edible uses, coconut oil is high in saturated fat, which U.S. consumers are trying to avoid.

Global ending stocks of coconut oil in 1991/92 were projected to fall 12 percent to 350,000 tonnes.

World production of copra meal was estimated to be 1.6 million tonnes, down 3 percent from 1990/91. Global exports of meal were forecast at almost 1.1 million tonnes, 5 percent less than the season before. In Indonesia and the Philippines, more copra meal is being diverted to domestic industries, particularly livestock and poultry production. World consumption of copra meal in 1991/92 was forecast to increase slightly to 1.6 million tonnes.

World Copra Production by Principal Countries In Thousands of Metric Tons

Crop Year	Naupu	Fiji	India	Indonesia	Jamaica	Malaysia	Mexico	Mozambique	Papua-New Guinea	Philippines	Solomon Isl.	Sri Lanka	Tanzania	Thailand	Ivory Coast	Van./New Heb.	Vietnam	World Total
1981–2	42	25	335	1,205	28	206	100	50	132	2,077	33	174	29	35	26	44	40	4,790
1982–3	42	25	268	1,091	29	208	110	50	120	2,015	31	131	29	30	27	45	40	4,600
1983–4	42	25	300	1,225	30	214	100	55	158	1,237	43	62	29	35	36	47	60	3,781
1984–5	42		360	1,260		166	100	55	176	1,813	45	240		93	60	39	65	4,681
1985–6			380	1,250		162	100	55	160	2,500	31	242		65	53	41	70	5,306
1986–7			320	1,270		97	115	65	149	2,100	28	125		74	48	36	70	4,709
1987–8			300	1,250		97	140	65	136	1,800	35	62		74	48	30	70	4,390
1988–9[1]			330	1,270		94	140	65	150	1,850	35	130		74	49	35	80	4,340
1989–90[2]			350	1,210		93	135	65	150	1,900	35	170		74	50	35	80	4,900
1990–1[2]			350	1,260			170		150	2,150		190						4,690
1991–2[2]			360															4,570

[1] Preliminary. [2] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.109

World Coconut Oil Supply and Distribution In Thousands of Metric Tons

	Production							Consumption						Ending Stocks		
Crop Year	Malaysia	India	Indonesia	Philippines	Total	Exports	Imports	EC-12	India	Indonesia	Philippines	United States	Total	Philippines	United States	Total
1983/4	125	189	672	786	2,273	1,053	908	374	199	577	223	415	2,424	104	50	253
1984/5	104	226	708	919	2,607	1,186	1,102	410	226	574	253	386	2,553	115	59	223
1985/6	86	236	720	1,587	3,296	1,613	1,523	575	236	710	286	461	3,040	178	140	389
1986/7	56	198	731	1,320	2,934	1,487	1,340	553	198	610	257	488	2,800	187	123	375
1987/8	50	186	720	1,115	2,680	1,388	1,378	510	187	500	296	424	2,680	142	151	380
1988/9	54	205	738	1,110	2,590	1,205	1,220	500	210	580	322	407	2,640	217	94	330
1989/90[1]	54	217	765	1,197	2,860	1,590	1,490	529	210	585	340	425	2,810	169	114	280
1990/1[2]		354			2,910	1,470	1,450						2,890			270

[1] Preliminary. [2] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.110

COCONUT OIL AND COPRA

Supply & Distribution of Coconut Oil in the United States In Millions of Pounds

Year Begin. Oct. 1	Copra Tonne Rotterdam U.S. $	Coconut Oil CIF Rotterdam U.S. $	Imports For Consumption	Stocks Oct. 1[2]	Total Supply	Exports & Shipments	Disappearance			Production of Coconut Oil (Refined)				
							Total Domestic	Edible Pdt's.	Inedible Pdt's.	Total	Jan.–March	April–June	July–Sept.	Oct.–Dec.
1982–3	414	608	882	60	942	20	880	340.0	493.9	665.7	162.1	162.4	168.7	172.5
1983–4	707	1,123	916	145	1,061	37	914	299.0	602.0	692.6	163.1	186.0	167.1	176.4
1984–5	476	746	890	111	1,001	20	851	275.0	376.0	616.2	161.3	175.7	145.1	134.1
1985–6	200	304	1,217	130	1,347	22	1,017	332.8	683.0	564.0	130.7	133.9	147.6	151.8
1986–7	285	413	1,087	308	1,395	48	1,076	319.4	720.4	715.4	197.9	180.4	155.4	181.7
1987–8	385	547	1,073	271	1,344	77	934	233.3	699.7	803.7	194.2	214.9	195.3	199.3
1988–9	371	545	778	332	1,111	55	904	211	713	708.8	165.1	182.0	166.3	195.4
1989–90	251	371	1,038	152	1,190	44	865	162		704.5	163.8	187.3	156.6	196.8
1990–1[1]	226	324	992	279	1,216	55	937			703.1	150.8	141.8	265.2	145.3
1991–2[1]			970	279		55	940				154.4	159.3		

[1] Preliminary. [2] Includes G.S.A. stockpile & in U.S. bond. *Sources: Bureau of the Census; Agricultural Marketing Service* T.112

U.S. Consumption of Coconut Oil in End Products (Edible & Inedible Pdts.) In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	63.3	59.6	61.7	58.5	64.7	64.2	62.2	63.9	66.1	60.2	70.5	60.6	755.5
1983	62.0	64.8	61.1	64.8	80.2	74.9	70.5	61.2	64.3	68.4	66.2	61.0	799.4
1984	71.5	68.5	66.0	67.0	72.6	70.9	61.8	70.7	48.1	63.4	56.6	45.3	762.4
1985	53.4	57.1	46.1	52.5	51.7	52.8	53.2	57.2	61.2	53.0	57.7	50.0	645.9
1986	67.7	43.8	44.7	52.5	45.7	50.0	49.5	67.2	52.8	78.7	65.9	52.2	670.7
1987	63.7	58.0	76.2	74.1	72.8	81.4	73.8	79.1	82.5	89.6	70.0	72.8	894.0
1988	76.1	71.2	59.1	59.6	66.8	65.8	55.1	53.8	48.7	65.2	57.8	57.9	737.1
1989	52.6	51.6	64.3	55.0	65.9	58.0	60.5	51.3	48.7	55.1	49.7	39.6	652.3
1990	45.4	44.9	44.3	44.6	43.2	39.4	39.8	39.5	39.2	49.7	41.0	43.9	514.9
1991[1]	——	137.6	——	——	150.6	——							

[1] Preliminary. *Source: Bureau of the Census* T.114

Stocks of Coconut Oil (Crude & Refined) in the United States[2] In Millions of Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1982	173.1	153.6	186.0	160.7	153.0	170.8	194.8	184.3	166.9	159.7	144.5	144.5
1983	127.2	143.8	144.7	144.0	162.9	168.9	123.6	127.7	131.8	145.3	162.5	175.6
1984	175.2	215.5	193.8	165.0	150.2	121.8	78.7	90.9	100.2	111.0	119.8	107.3
1985	121.4	128.0	91.9	81.3	75.9	86.0	116.0	121.7	140.5	130.0	177.4	162.8
1986	206.5	259.0	262.1	285.1	247.4	289.3	275.0	273.4	273.8	308.0	295.5	320.5
1987	323.3	323.6	355.7	318.1	336.9	271.2	203.6	243.9	240.8	270.2	288.5	370.9
1988	367.7	358.8	370.7	371.1	356.0	353.6	336.6	290.2	287.5	335.0	332.7	307.0
1989	275.7	278.9	247.4	205.3	167.7	134.7	189.9	177.5	149.8	150.8	218.6	238.5
1990	297.3	304.4	307.0	348.0	305.6	306.6	292.2	264.3	315.4	281.1	309.3	304.6
1991[1]	——	——	359.0	——	——	419.7						

[1] Preliminary. [2] Includes coconut oil held in U.S. customs bond. *Source: Bureau of Census* T.115

Average Price of Coconut Oil (Crude) Tank Cars at New York[1] In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	24.8	24.8	22.9	23.0	23.3	23.1	21.1	19.3	19.8	20.0	N.A.	N.A.	22.2
1983	N.A.	20.3	21.0	25.6	28.4	35.8	33.7	N.A.	N.A.	N.A.	N.A.	44.9	27.5
1984[1]	49.2	54.3	53.0	50.8	63.0	69.9	73.3	70.0	64.6	65.6	56.2	52.6	60.2
1985	42.2	40.2	41.0	41.0	N.A.	N.A.	31.7	27.5	25.0	24.0	22.8	17.4	31.3
1986	20.6	18.0	15.6	15.5	13.8	13.9	13.8	13.0	13.3	16.8	19.8	20.7	16.2
1987	21.40	20.88	19.30	20.38	21.44	24.25	25.75	25.13	24.40	24.69	24.50	27.15	23.27
1988	28.81	26.06	25.45	25.25	26.50	30.45	31.88	28.30	27.38	27.44	28.06	27.81	27.80
1989	26.75	27.63	27.90	28.94	29.90	29.56	28.94	27.75	28.63	27.25	26.35	24.75	27.86
1990	24.31	23.69	22.10	21.63	21.15	20.31	19.16	18.58	18.26	18.18	20.45	20.13	22.69
1991	20.22	20.31	20.50	19.38	19.69	21.69							

[1] Prior to 1984, prices are at the U.S. Pacific Coast *Source: Bureau of Labor Statistics* T.116

Coffee

Coffee traders had a case of jangled nerves in 1991, as prices plunged headlong down a long coffee-covered mountain into new low territory. High stocks in producing and consuming countries, a lack of progress towards a revival of the International Coffee Agreement (ICA), and a generally sluggish demand pattern contributed to the price decline.

World coffee production for 1991/92 was estimated at 101.1 million 60-kilogram bags by the USDA. This figure was about the same as 1990/91's estimated production and reflected crop difficulties in Brazil and Indonesia. In contrast, Colombia's crops were records in both seasons. It was possible that the overall global trend toward lower production would accelerate in coming years because of the low price of coffee.

Colombia over recent years has followed a policy of increasing its support payments to growers. However, by the end of 1991, the government indicated that these increases were no longer supportable, as the national coffee fund was losing more than $100 million a year. As a result, Colombian crops, now estimated at around 16 million 60-kilogram bags a year, were expected to decline in the late 1990s.

Problems in Brazil were more complicated. The world's largest coffee-producing nation, Brazil had lost some $4 billion in revenue since the breakdown of the International Coffee Agreement. Farmers have been crushed by the government's Draconian economic measures, which have been unable to stem inflation, while severely wringing out excess capital from the economy.

Consequently, many Brazilian coffee farmers had not fertilized their crops during the previous three years, leaving trees very vulnerable to weather-related stress. Changes in the global weather pattern, which have brought more drought-like conditions to the Brazilian coffee belt over the past five years than in any other five-year period, did not bode well for production.

Global exportable coffee production in 1991/92 was estimated at 76.9 million bags, compared with 1990/91's 77.4 million bags. Exportable production is total harvested production less domestic consumption.

Stocks held at source and in consuming countries have been a major weight on coffee prices in the years since the 1989 breakdown of the ICA. Previously, under a quota agreement, the amount of exports was limited by a global export quota that was portioned out on a country-by-country basis, according to a formula based on stocks, exports, and historical export patterns. This kept stocks in consumer countries low and rewarded producers for keeping inventories in their own warehouses. However, there was widespread cheating on the quotas and on prices charged to non-member nations.

At the end of 1991, stocks in producer countries were estimated at 37.4 million bags, 4 percent below 1990's year-end total of 39.1 million bags. While these stock levels were still considered to be too high, there was some question as to their actual quantity and quality. Stocks held in consumer nations were variously estimated at between 18 million and 21 million bags.

U.S. imports of all types of green coffee (green equivalent) during October-September 1990/91 fell 14 percent to 19.5 million 60-kilogram bags, according to the USDA. While this import figure is lower, estimated consumption increased to 14.7 million bags in the first ten months of 1991, against 14.3 million bags in the comparable 1990 period. Total roastings in 1990 were 17.7 million bags, and the 1991 level was estimated at 18.1 million bags.

Domestic consumption of roasted ground coffee on the higher end has increased in recent years. While the percentage of coffee drinkers in the U.S. has fallen from 74 percent to 52 percent (of the population 10 years of age and older) over the past 30 years, consumption of premium coffees has increased.

In late 1991 and early 1992, meetings were held to work towards the reinstitution of an International Coffee Agreement. In the September 1991 meetings, it was felt that there was a strong need on the part of the producers for a renewed agreement; it was also agreed that there was a need for a unified market without division between member and non-member nations and a necessity to achieve a balance between supply and demand. However, there were large and intractable differences among producers and among consumers, as well as differences between producers and consumers, as to how to best achieve these aims.

Futures Markets

Arabica futures are traded in New York, and robusta coffee futures are traded in London and Paris. Options are traded in New York and London.

World Coffee Supply and Distribution In Thousands of 60 Kilogram Bags

Crop Year	Beginning Stocks	Production	Total Imports	Total Supply	Bean Exports	Rst/Gm Exports	Soluble Exports	Domestic Use	Ending Stocks
1986/87	42,248	79,549	262	122,059	66,408	298	2,333	22,201	33,450
1987/88	33,450	103,231	296	136,977	67,169	337	2,329	23,056	46,752
1988/89	46,752	94,292	415	141,459	70,700	162	2,856	22,839	47,920
1989/90[1]	47,920	97,412	258	145,590	83,405	129	3,239	23,122	39,063
1990/91[2]	39,063	101,159	538	140,760	77,610	64	2,978	24,084	39,066
1991/2[3]	39,066	101,055	478	140,599	78,890	65	3,118	24,334	37,375

Note: Total may not add because of rounding. [1] Preliminary. [2] Estimate. [3] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.117a

COFFEE

World Green Coffee (Total) Production In Thousands of 60 Kilo Bags (132.276 Lbs. Per Bag)

Crop Year	Papua-N. Guinea	Brazil	Cameroon	Colombia	Costa Rica	Ethiopia	Guatemala	India	Indonesia	Ivory Coast	Mexico	Salvador	Uganda	Zaire (Congo, K)	World Total
1980–1	870	21,500	1,959	13,500	2,140	3,264	2,702	1,977	5,365	6,090	3,862	2,940	2,133	1,526	86,344
1981–2	910	33,000	1,850	14,342	1,782	3,212	2,653	2,540	5,785	4,160	3,900	2,886	2,885	1,425	98,189
1982–3	640	17,750	1,830	13,300	2,300	3,670	2,530	2,170	4,750	4,510	4,530	3,100	3,000	1,354	82,778
1983–4	925	30,000	1,000	13,000	2,070	3,300	2,340	1,667	5,515	1,420	4,530	2,400	2,700	1,350	88,595
1984–5	775	27,000	2,316	11,000	2,516	2,587	2,703	3,250	5,600	4,609	4,250	2,680	2,800	1,540	90,266
1985–6	860	33,000	2,067	12,000	1,514	2,833	2,650	2,033	5,800	4,420	4,826	2,300	2,700	1,610	95,934
1986–7	756	13,900	2,191	11,000	2,566	2,700	2,843	3,350	5,900	4,405	5,297	2,275	2,700	1,875	79,549
1987–8	1,100	38,000	1,251	13,000	2,375	3,200	3,020	2,050	5,965	3,103	4,717	2,538	2,600	2,000	103,231
1988–9	1,175	25,000	1,760	10,700	2,758	3,300	3,022	3,590	6,750	3,989	5,500	1,492	3,300	1,750	94,292
1989–90	1,092	26,000	1,440	13,300	2,453	3,400	3,472	2,150	7,100	4,734	5,100	2,787	2,500	2,000	97,412
1990–91[1]	964	31,000	1,365	14,500	2,565	3,500	3,282	2,970	7,250	4,000	4,550	2,402	2,700	1,695	101,159
1991–92[2]	825	28,500	990	15,000	2,680	3,500	3,250	3,400	6,800	4,500	4,850	2,400	3,000	1,640	101,055

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.117

World Green Coffee (Exportable)[3] Production In Thousands of 60 Kilo Bags

Crop[2] Year	Papua-N. Guinea	Brazil	Cameroon	Colombia	Costa Rica	Ethiopia	Guatemala	Indonesia	Ivory Coast	Kenya	Mexico	Salvador	Uganda	Zaire (Congo, K)	World Total
1980–1	837	13,500	1,926	11,675	1,932	1,664	2,381	4,137	6,026	1,648	2,362	2,740	2,090	1,346	66,064
1981–2	901	24,500	1,815	12,492	1,539	1,596	2,328	4,630	4,095	1,434	2,450	2,686	2,840	1,240	77,311
1982–3	631	9,750	1,785	11,445	2,077	2,108	2,195	3,636	4,445	1,501	2,830	2,900	2,954	1,159	62,366
1983–4	923	21,500	945	11,140	1,837	1,728	2,000	4,375	1,395	1,938	3,030	2,200	2,653	1,150	67,676
1984–5	762	16,500	2,261	9,135	2,281	1,087	2,373	4,590	4,582	1,488	2,635	2,480	2,752	1,340	67,449
1985–6	842	24,000	1,987	10,130	1,276	1,293	2,350	4,800	4,391	1,951	3,326	2,120	2,650	1,410	74,841
1986–7	738	4,900	2,058	9,000	2,324	1,034	2,543	4,950	4,375	1,591	3,797	2,095	2,649	1,670	57,786
1987–8	1,087	28,000	1,206	10,980	2,140	1,756	2,720	4,915	3,071	1,985	3,137	2,369	2,547	1,791	80,390
1988–9	1,160	15,500	1,725	8,891	2,508	1,500	2,717	5,478	3,957	1,787	3,880	1,332	3,250	1,530	71,647
1989–90	1,160	15,500	1,405	11,538	2,198	2,239	3,162	5,775	4,700	1,665	3,650	2,607	2,434	1,780	74,528
1990–91[1]	954	20,000	1,330	12,885	2,305	1,800	2,967	5,900	3,964	1,482	3,150	2,222	2,650	1,480	77,420
1991–92[4]	815	17,500	955	13,430	2,420	1,800	2,930	5,420	4,462	1,630	3,400	2,216	2,950	1,440	76,922

[1] Preliminary. [2] Coffee marketing year begins in July in some countries & in others about Oct. [3] Exportable production represents total harvested production minus estimated domestic consumption. [4] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.118

Coffee United States Trade—Quantity and Value

		Imports				Exports				Reexports			
		Green	Roasted[1]	Soluble[1]	Total	Green	Roasted[1]	Soluble[1]	Total	Green	Roasted[1]	Soluble[1]	Total
1983	Ths. Bags	16,449	197	1,019	17,665	14	147	199	360	599	30	22	651
	Mil. $	2,592	32	141	2,765	3	44	51	98	104	10	3	117
1984	Ths. Bags	17,734	284	1,075	19,093	29	141	188	358	888	7	5	900
	Mil. $	3,061	50	153	3,264	5	44	46	95	163	2	1	167
1985	Ths. Bags	18,698	258	994	19,950	22	167	140	328	695	7	12	714
	Mil. $	3,128	49	139	3,315	4	52	35	90	122	2	3	127
1986	Ths. Bags	19,843	268	930	21,044	45	167	107	319	1,085	17	5	1,107
	Mil. $	4,359	65	183	4,607	11	50	33	94	255	5	1	261
1987	Ths. Bags	19,906	288	925	21,119	57	138	156	351	819	5	9	834
	Mil. $	2,706	47	145	2,898	10	39	40	89				
1988	Ths. Bags	15,348	447	930	16,725	57	105	129	291	995	3	4	1,002
	Mil. $												
1989	Ths. Bags	19,377	373	1,122	20,872	91	162	135	388	553	2	3	558
	Mil. $												
1990	Ths. Bags	19,566	243	1,115	20,924	62	148	137	347	393	24	2	419
	Mil. $												
1991	Ths. Bags	18,849	243	641	19,733	58	196	134	388	499	10	4	513
	Mil. $												

[1] 60 kilogram bags of 132.276 pounds each. [2] Converted to bags of green bean equivalent (GBE) at 1.19 pounds green to 1 pound roasted and 2.6 pounds green to 1 pound soluble. *Source: Compiled from U.S. Department of Commerce, Bureau of Census data.*

Origin of Green Coffee Imports (for Consumption) into the U.S. In Thousands of 60 Kilo Bags

Year	Uganda	Brazil	Colombia	Costa-Rica	Domin. Repub.	Ecuador	Ethi-opia	Guate-mata	Indon-esia	Ivory Coast	Mexico	Peru	Phil-ippines	Salva-dor	Vene-zuela	Grand Total
1985	739	4,148	2,554	360	439	974	195	1,054	1,041	951	1,812	543	407	1,366	107	18,698
1986	739	2,200	2,629	413	488	1,371	243	1,658	1,346	694	2,125	675	440	1,108	224	19,483
1987	587	3,928	2,549	551	446	1,285	421	1,439	911	476	2,764	573	105	1,117	163	19,906
1988	481	4,213	2,235	233	366	811	218	609	731	654	1,719	436	298	829	72	15,348
1989	458	4,155	2,413	393	402	1,137	432	1,404	635	335	3,937	673	362	790	87	19,377
1990	246	3,633	2,771	403	445	876	234	1,871	830	54	3,305	473	107	843	222	19,566
1991[1]	287	5,335	3,048	603	343	785	31	1,489	536	206	2,993	610	61	868	108	18,849

[1] Preliminary. *Source: U.S. Department of Commerce* T.122

Total Coffee (Green) Imports (for Consumption) into the U.S. In Thousands of 60 Kilo Bags

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	1,622	1,681	1,702	1,430	1,324	1,751	1,217	1,757	1,773	1,385	1,272	1,785	18,698
1986	2,360	1,836	1,645	1,667	1,810	1,286	1,549	1,513	1,641	1,535	1,449	1,192	19,483
1987	1,092	1,218	1,841	1,789	1,883	2,181	1,717	1,481	1,770	2,631	1,246	1,056	19,906
1988	1,175	1,683	1,427	1,179	1,141	832	1,543	1,621	1,238	1,272	1,195	1,040	15,348
1989	1,646	1,323	1,368	1,398	1,296	1,199	1,634	1,974	1,951	2,180	1,748	1,660	19,337
1990	1,950	1,989	2,358	1,783	1,658	1,548	1,451	1,261	1,229	1,611	1,140	1,591	19,566
1991	2,106	1,946	1,590	1,748	1,556	984	1,056	1,335	1,424	1,368			

[1] Prior to 1988 data are in thous of 60 kilo bags. *Source: U.S. Dept. of Commerce* T.121

Average Spot Price of Coffee (Brazilian[1]) at N.Y. In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	140.0	145.0	141.0	138.0	138.0	140.0	134.0	133.0	133.0	137.0	155.0	175.0	142.4
1986	241.0	226.0	235.0	228.0	218.0	193.0	188.0	185.0	193.0	187.0	167.0	146.0	200.6
1987	126.5	119.8	103.4	102.1	109.2	108.0	99.8	95.9	96.6	105.4	118.6	119.4	108.7
1988	119.0	127.4	127.3	122.8	121.7	122.5	121.0	111.5	115.1	113.2	116.8	131.1	120.8
1989	146.6	131.1	127.6	126.3	135.6	121.4	88.4	77.8	78.3	70.6	71.5	70.0	103.8
1990	71.5	76.5	81.4	84.4	83.6	78.4	75.1	80.7	86.7	85.1	79.8	81.6	80.4
1991	81.8	80.0	81.7	80.1	75.8	71.3	67.2	65.8	67.8	61.2	59.1	57.1	70.7

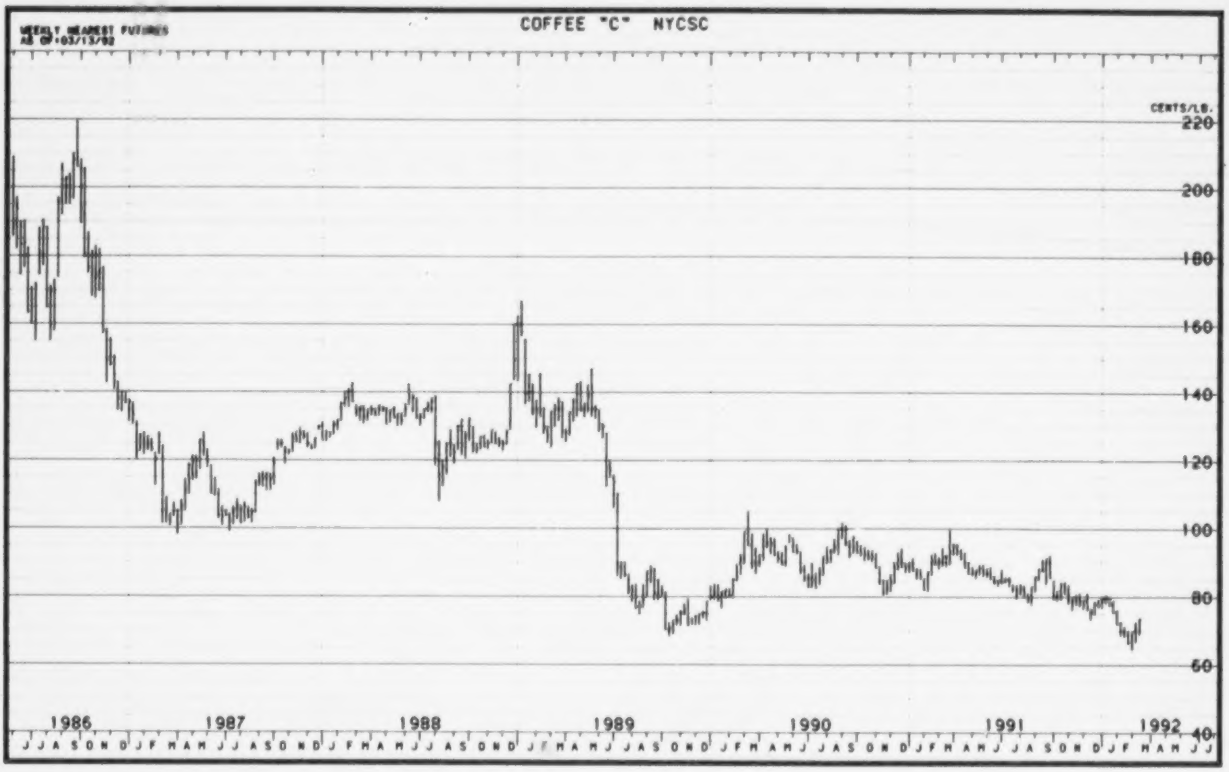
Sources: Bureau of Labor Statistics (0191-0101.01); Wall St. Journal; CRB. T.120

U.S. Average Monthly Wholesale Prices of Coffee In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Ground Roast—All Packs													
1985	276.7	277.3	277.8	277.7	279.0	273.0	273.5	273.6	273.9	273.7	275.0	284.0	276.3
1986	334.5	357.5	361.7	367.6	368.9	373.9	366.5	358.0	352.6	350.9	347.7	347.6	357.3
1987	329.6	329.4	319.4	310.1	302.5	300.2	296.4	296.0	279.0	281.4	284.3	283.4	301.0
1988	286.1	287.2	292.8	295.6	295.2	295.7	287.4	288.5	289.4	292.4	288.1	288.8	290.6
1989	294.1	305.3	306.2	305.5	304.8	304.8	303.8	297.8	289.3	285.3	280.6	280.6	296.5
1990	279.8	276.7	275.9	277.6	277.1	278.2	278.2	279.0	278.7	275.6	282.8	282.8	278.5
1991	281.3	281.1	282.9	283.4	284.2	283.6	281.6	273.3					
Ground Roast in One Lb Cans													
1985	259.7	259.9	261.3	260.8	267.3	258.3	254.6	254.9	254.6	254.6	256.6	268.6	259.3
1986	334.2	345.4	346.7	345.7	350.7	349.4	348.4	350.3	341.7	343.8	334.5	334.5	343.8
1987	311.4	314.3	298.1	296.6	297.3	296.9	291.7	292.5	281.0	282.0	285.6	284.6	294.3
1988	284.0	283.2	294.9	294.2	294.2	298.0	279.5	284.1	283.4	286.7	285.0	285.1	287.7
1989	288.8	301.3	311.1	314.0	314.0	315.2	315.0	308.0	298.5	300.4	301.0	303.0	305.9
1990	303.7	303.0	302.8	308.6	309.8	309.2	309.2	309.2	309.1	304.2	331.3	333.8	311.2
1991	333.4	333.7	334.9	334.4	334.5	332.8	319.9	306.0					
Soluble Per 16 Ounces													
1985	795.1	789.5	791.5	793.3	790.1	791.1	799.2	801.8	804.1	804.8	817.8	837.8	801.3
1986	932.4	995.4	1012.8	1020.3	1016.1	1014.0	1003.4	956.4	970.8	952.2	977.7	977.7	985.8
1987	943.2	885.2	861.9	861.9	866.5	866.5	846.3	846.3	825.6	830.6	830.6	830.6	857.9
1988	805.8	805.8	815.3	812.6	812.6	812.6	922.0	922.0	922.0	922.0	922.0	922.0	866.4
1989	915.4	948.4	941.9	941.9	941.9	952.3	952.3	921.0	921.0	915.6	915.6	915.6	931.9
1990	915.6	915.6	902.5	918.2	918.2	918.2	918.2	918.2	918.1	912.9	912.9	912.9	915.1
1991	912.9	967.2	967.1	967.1	944.0	940.8	929.6	915.2					

Source: Bureau of Labor Statistics; Foreign Agricultural Service, U.S.D.A.

COFFEE



High, Low & Closing Prices of May Coffee Futures in New York In Cents per Pound

Year of Delivery		Year Prior to Delivery										Delivery Year					Life of Delivery Range
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1984	High	117.00	117.75	126.00	124.50	124.00	127.25	130.05	137.30	139.90	144.10	139.65	145.00	152.30	154.23	158.50	158.50
	Low	109.50	113.00	116.00	121.50	121.60	122.25	125.25	129.30	134.50	134.30	134.25	132.75	141.90	147.00	147.80	108.50
	Close	115.13	116.75	123.38	122.51	122.26	125.80	129.25	135.50	138.78	135.94	137.05	144.84	151.37	152.20	154.00	—
1985	High	131.50	138.50	152.00	146.28	140.15	146.00	143.15	135.35	139.15	140.25	147.90	150.70	146.20	147.30	147.50	152.00
	Low	125.28	130.00	137.50	137.75	132.90	133.25	132.75	131.31	134.50	135.60	138.65	139.85	139.25	138.85	143.00	122.01
	Close	131.38	138.50	142.25	137.76	133.48	144.15	133.80	135.05	135.72	140.25	147.24	139.96	144.43	145.80	143.50	—
1986	High	142.50	145.00	144.50	148.75	143.50	142.13	144.45	161.18	171.45	214.09	272.62	261.00	257.00	243.70	234.25	272.62
	Low	136.59	137.00	141.55	142.28	136.20	137.75	137.15	136.20	155.25	174.90	217.80	207.78	231.15	215.25	202.00	130.25
	Close	141.75	143.00	144.00	144.88	138.65	140.75	140.60	161.18	171.45	241.09	218.51	246.96	246.44	229.07	204.05	—
1987	High	265.00	261.00	250.00	210.50	198.50	205.00	219.50	189.00	173.00	150.50	137.50	130.50	126.80	121.30	128.00	291.83
	Low	247.00	239.10	210.25	177.00	169.95	165.50	173.00	165.38	149.26	132.50	122.20	115.50	99.90	98.10	114.50	98.10
	Close	265.00	247.38	210.25	180.25	184.50	199.50	192.78	169.38	151.25	138.00	126.99	129.31	100.04	119.30	122.08	—
1988	High	131.00	128.00	129.75	124.00	114.90	123.90	123.75	131.00	134.85	133.25	134.50	144.40	137.50	136.00	139.75	150.00
	Low	111.75	110.50	119.20	110.00	107.00	109.50	116.50	118.55	128.75	128.15	128.00	134.40	131.70	130.60	130.10	107.00
	Close	111.75	123.01	124.00	111.31	109.45	122.90	118.88	129.06	131.58	128.38	134.29	135.31	134.51	130.60	131.10	—
1989	High	144.40	144.00	140.60	143.75	135.00	126.75	132.00	129.70	128.13	158.00	159.20	137.00	133.24	143.20	147.00	159.20
	Low	140.00	135.75	133.35	130.25	118.75	112.13	120.55	123.70	122.00	121.40	128.00	122.90	125.55	127.30	132.75	112.13
	Close	142.50	136.90	136.00	131.25	124.13	122.50	132.00	124.88	122.80	152.86	128.59	127.32	128.13	134.70	142.85	—
1990	High	120.85	124.48	124.50	123.00	108.00	91.00	92.35	85.50	83.55	85.50	85.40	94.40	105.50	99.80	95.00	124.50
	Low	115.25	113.50	113.50	105.00	85.70	82.25	83.05	72.75	76.30	77.40	78.50	81.35	87.30	90.60	88.90	72.75
	Close	116.38	117.00	118.50	110.50	85.94	90.25	85.13	78.80	79.90	81.45	81.59	93.79	92.14	92.25	93.95	—
1991	High	113.00	109.00	106.00	103.50	102.00	109.10	109.25	100.35	95.95	98.00	93.60	95.25	100.00	95.40	89.30	113.00
	Low	98.50	100.50	98.00	93.35	93.15	99.25	98.10	96.40	87.00	89.10	84.85	84.35	89.70	86.50	85.50	84.35
	Close	101.75	101.18	103.15	93.35	102.00	108.00	98.45	96.45	89.30	91.15	85.60	92.75	94.70	87.20	88.65	—
1992	High	106.40	106.00	100:25	98.50	95.70	95.10	99.90	90.60	88.30	88.60						
	Low	102.00	98.75	96.30	94.50	88.50	87.40	87.40	85.40	82.85	79.70						
	Close	104.90	99.55	96.55	94.90	90.15	94.40	88.55	87.20	86.10	80.45						

Source: N.Y. Coffee, Sugar & Cocoa Exchange, Inc. T.125

Average Open Interest of Coffee Futures at New York In Contracts

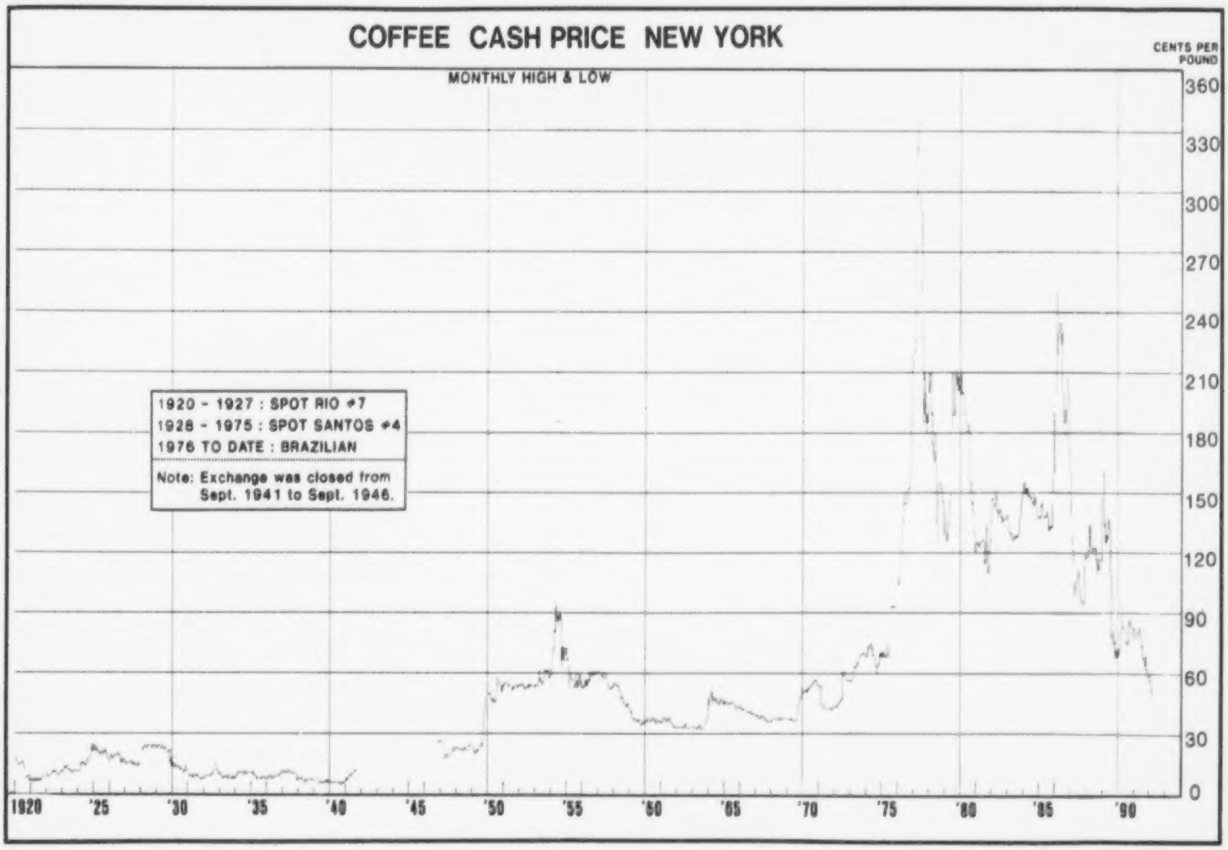
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	9,718	10,346	10,498	11,692	11,552	9,930	8,154	8,957	8,950	9,260	9,103	8,787
1984	7,928	9,664	11,925	12,058	11,343	9,844	9,969	9,776	9,347	10,696	10,192	11,320
1985	13,493	13,291	12,952	12,885	12,811	12,393	11,722	11,015	10,198	10,504	11,652	13,287
1986	13,104	14,391	15,714	15,972	16,684	15,712	15,917	16,374	16,798	18,079	16,995	14,905
1987	15,317	16,034	17,415	20,445	22,455	21,160	22,536	23,943	25,857	26,418	22,757	21,064
1988	22,581	26,100	24,591	21,413	22,228	23,346	21,570	24,525	22,460	21,961	19,424	20,356
1989	24,544	23,684	23,246	25,870	23,663	24,716	27,184	31,410	32,404	35,019	32,687	32,096
1990	37,352	43,516	46,187	43,978	41,756	40,464	39,856	41,428	39,278	39,523	43,750	41,365
1991	42,320	41,326	39,948	39,410	41,726	43,717	42,037	40,661	42,126	43,940	41,819	40,628

Source: N.Y. Coffee, Sugar & Cocoa Exchange, Inc. T.124

Volume of Trading of Coffee "C" Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	30,567	32,884	44,211	37,399	44,917	45,575	26,065	32,818	22,579	38,999	34,428	36,999	427,441
1984	33,327	44,890	46,793	46,833	51,174	42,891	34,956	48,979	43,159	29,703	37,457	36,094	499,133
1985	48,733	54,809	52,365	58,531	38,755	54,725	42,222	39,425	23,615	58,870	83,845	94,671	650,768
1986	113,305	95,509	76,787	82,308	75,176	87,323	78,670	106,366	93,465	112,685	89,713	61,835	1,073,142
1987	69,564	81,427	78,671	104,350	71,189	86,564	77,621	106,182	77,207	85,315	72,846	53,650	964,586
1988	67,955	119,075	85,154	80,772	73,379	125,684	91,569	118,956	88,460	83,713	85,366	129,627	1,149,710
1989	141,903	106,019	102,594	129,018	95,902	134,848	100,700	122,207	97,744	104,100	111,434	82,484	1,328,953
1990	130,223	174,115	211,105	144,641	128,121	147,605	127,767	172,947	119,088	113,569	175,067	119,802	1,774,050
1991	138,642	174,688	188,842	153,436	103,344	135,887	107,058	170,113	180,017	148,640	159,099	112,882	1,772,648

Source: N.Y. Coffee, Sugar & Cocoa Exchange, Inc. T.123



Coke

U.S. Salient Statistics of Coke In Thousands of Short Tons

			Producers' Stocks—Jan. 1													
				Oven Coke at Plants					Exports to							Avg. Price of Coke Exports
Year	Production[2]	Domestic Consumption	Total	Merchant	Furnace	Petroleum Coke	Exports	Imports	Canada	Mexico	Bel./Lux.	Netherlands	Korea Rep.	Turkey	Venezuela	$ SH. Ton
1977	53,509	54,144	6,487	314	6,173	2,127	1,241	1,829	634.9	49.4						
1978	49,009	56,948	6,444	136	6,308	2,050	693	5,722	299	37.4						
1979	52,943	53,826	3,534	184	3,350	2,214	1,440	3,974	598	61.0						
1980	46,132	41,278	5,185	595	4,590	1,042	2,071	659	812	75.0						
1981	42,786	44,046	8,627	1,106	7,521	846	1,170	527								
1982	28,115	25,776	6,724	403	6,324	900	993	120	449.7	72.0	99.3	132.7	4.5	—	40.1	61.81
1983	25,808	29,850	8,190	331	7,858	1,344	665	35	471.2	55.8	24.7	24.0	—	—	7.0	68.53
1984	30,561	29,899	3,518	286	3,233	1,096	1,045	582	477.0	72.8	106.4	150.2	64.8	80.1	65.8	66.48
1985	28,651	29,270	3,716	353	3,363	968	1,122	578	407.3	97.3	108.8	68.0	.1	57.6	42.6	68.40
1986	25,540	25,351	2,553	404	2,148	1,232	1,004	329	476.9	78.3	59.0	60.7	—	17.4	20.4	65.23
1987	28,037	29,387	2,066	288	1,778	1,206	574	922	248.2	106.4	21.5	—	.2	32.0	89.6	83.58
1988	32,405	33,480	1,064	218	846	1,350	1,093	2,688	347.8	101.2	—	15.3	—	34.2	94.7	70.57
1989	33,015	33,904	1,583	163	1,420	1,558	1,085	2,311	644.1	156.6					77.1	
1990[1]	28,948	29,141	1,919	216	1,703	1,720	572	765								
1991[3]			1,918	244	1,674	1,436										

[1] Preliminary. [2] Beehive and oven, coke & breeze. [3] Estimate. *Source: Bureau of Mines* T.127

Petroleum Coke Production in the United States In Thousands of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	2,469	2,215	2,502	2,608	2,748	2,892	2,962	2,978	2,684	2,942	2,899	3,305	33,204
1986	3,161	2,825	3,027	2,865	3,191	3,176	3,059	3,230	3,171	3,066	2,925	3,206	36,903
1987	3,228	2,960	3,034	2,974	3,087	3,121	3,190	3,138	3,047	3,060	3,158	3,384	37,380
1988	3,436	3,171	3,415	3,164	3,367	3,282	3,333	3,347	3,205	3,281	3,347	3,462	39,811
1989	3,505	2,931	3,201	3,200	3,337	3,406	3,509	3,447	3,255	3,252	3,104	3,227	39,533
1990	3,336	3,142	3,329	3,278	3,357	3,291	3,437	3,617	3,304	3,366	3,351	3,502	40,332
1991[1]	3,518	3,056	3,276	3,303	3,527	3,404	3,537	3,575	3,410				

[1] Preliminary. *Source: Bureau of Mines* T.128

United States Coke Production & Stock In Thousands of Short Tons

	Production					Stocks							
	Beehive & Oven (Byproduct)					Oven-coke Plants				Petroleum Coke			
Year	Jan.–Mar.	Apr.–June	July–Sept.	Oct.–Dec.	Total	Jan. 1	Apr. 1	July 1	Oct. 1	Jan. 1	Apr. 1	July 1	Oct. 1
1980	13,042	12,320	10,052	10,718	46,132	5,185	5,832	7,426	9,018	1,042			
1981	11,178	9,853	11,175	10,580	42,786	8,627	7,586	4,990	5,198	846	948	758	765
1982	8,828	7,507	6,270	5,509	28,115	6,724	7,455	7,871	7,969	900	939	1,091	1,244
1983	5,579	6,451	6,753	7,025	25,808	8,190	5,781	4,569	3,875	1,344	1,317	1,231	964
1984	7,696	8,227	7,522	7,115	30,561	3,518	3,153	2,966	3,441	1,096	1,116	912	991
1985	7,211	7,601	7,150	6,689	28,651	3,716	3,471	3,279	3,217	968	1,086	1,100	950
1986	7,252	7,156	5,513	5,618	25,540	2,553	2,319	2,174	2,141	1,232	1,457	1,366	1,296
1987	5,937	7,073	7,438	7,589	28,037	2,066	1,853	1,546	1,436	1,206	1,435	1,307	1,128
1988	7,846	8,112	8,195	8,251	32,404	1,064	956	1,140	1,271	1,350	1,441	1,636	1,450
1989	8,172	8,360	8,302	8,181	33,015	1,583	1,167	1,264	1,763	1,558	1,655	1,813	1,724
1990	7,364	7,449	7,003	7,132	28,948	1,919	1,972	1,929	1,840	1,720	1,791	1,721	1,450
1991[1]	5,967	5,706				1,918	2,093	2,003		1,426	1,646	1,680	

[1] Preliminary. *Source: Energy Information Administration* T.131

Average Price of Coal Receipts at Coke Plants In Dollars per Short Ton

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986		52.05			51.01			51.34			48.65		50.83
1987		46.60			46.24			46.51			46.85		46.55
1988		47.29			48.04			48.13			47.66		47.70
1989		47.36			47.23			48.10			47.28		47.50
1990		47.61			47.65			47.76			48.15		47.79
1991[1]		47.90			47.65								

[1] Preliminary. *Source: Bureau of Labor Statistics* (0522-0101) T.130

Copper

U.S. mine production of copper rose by 3.5 percent in 1991 to 1.63 million tonnes, valued at $3.9 billion, according to the Bureau of Mines. Copper recovery from old scrap was estimated at 530,000 tonnes, up 1.9 percent from 535,000 in 1990. Old scrap converted into metal and alloys totaled 520,000 tonnes of copper, 24 percent of 1991 apparent consumption of 2.12 million tonnes. New scrap purchases from fabricators yielded 775,000 tonnes of copper. About 75 percent of the copper in new scrap was used by brass mills. Scrap accounted for 44 percent of domestic copper supplies.

World copper production rose almost 3 percent to 9.1 million tonnes from 8.836 million in 1990. Chile's output accounted for most of the increase, rising 12 percent to 1.790 million tonnes of contained copper, because of the first full year of production at La Escondida (which yielded 300,000 tonnes of contained copper). Codelco's mine output fell to 1.121 million tonnes from 1.195 million in 1990. The state-owned mining company was plagued by rock bursts at one mine and by labor problems related to plans to privatize the company. Output in Zaire fell to 300,000 tonnes from 370,000 in 1990, as a result of continued political unrest.

Despite recessions in the U.S. and other G-7 nations, producer prices averaged 110 cents/lb. in 1991. Spot high-grade copper averaged 107 cents/lb. on the London Metal Exchange. The U.S. was a net exporter of copper in 1991. Scrap shipments to China increased sharply, while Japan increased purchases of U.S. refined copper. Prices were supported by a lack of smelter capacity. In the U.S., the Texas City project, originally planned to handle concentrates from La Escondida, was delayed by more than three years because of environmental and other legal challenges. Mitsubishi decided to cancel the project in early 1992. However, there were plans for at least 10 new smelters outside North America that would increase global smelting capacity by about 1.5 million tonnes a year. The tightness in smelting capacity, privately estimated at 200,000 tonnes less than 1991 concentrate output, increased treatment and refining charges to a range of 26 cents to 29 cents/lb. of contained copper, compared with 20 cents or less in 1990.

Refined copper was consumed by 20 U.S. wire rod mills, 41 brass mills, and about 750 foundries, chemical plants and other facilities. About 40 percent of the copper consumed in the U.S. went into building construction, including the electrical components of the structures. This was several percentage points below construction's usual 42 percent share. But considering the state of the construction industry in 1991, it was a good performance. Other uses were: electrical and electronic products, 26 percent; industrial machinery and equipment, 14 percent; transportation, 11 percent; and consumer and general products, 9 percent.

Futures Markets

High-grade copper futures are traded on the Commodity Exchange (COMEX) in New York. Cash copper and futures are traded on the London Metal Exchange. Options are traded on both exchanges.

World Mine Production of Copper (Content of Ore) In Thousands of Metric Tons

Year	Australia	Canada[3]	Chile	China	Finland	Japan	Mexico	Peru	Zambia	Poland	Zaire	South Africa	Philippines	United States[3]	USSR[3]	World Total[1]
1982	245.3	612.4	1,242	175.0	37.8	50.7	229.2	353.8	574.5	376.0	519.0	188.7	292.1	1,147	560.0	7,622
1983	261.5	653.0	1,255	175.0	39.3	46.0	196.0	318.8	541.0	402.3	536.5	205.0	271.4	1,038	570.0	7,659
1984	235.7	721.8	1,308	180.0	31.3	43.3	189.7	353.9	532.7	431.0	562.0	198.2	233.4	1,103	590.0	7,999
1985	259.8	738.6	1,360	185.0	27.9	43.2	177.1	391.3	458.6	431.3	557.9	195.4	222.2	1,103	600.0	7,988
1986	248.4	697.9	1,399	185.0	26.0	34.9	189.1	397.4	462.4	434.0	531.7	184.2	222.6	1,144	620.0	7,993
1987	232.7	790.2	1,413	250.0	20.4	23.8	253.7	392.3	463.2	438.0	525.0	188.1	216.1	1,244	630.0	8,306
1988	238.3	753.5	1,472	375.0	20.2	16.7	280.2	298	431.8	437.0	530.0	168.5	218.1	1,420	640.0	8,537
1989	289.2	722	1,645	375.0	14.5	14.7	260.0	373	445.0	436.0	440	196.6	190	1,498	640.0	8,854
1990[2]	316	780	1,603	375				334	445	380	370		184	1,587	600	8,836
1991[1]	320	820	1,790	375				360	430	380	300		185	1,630	600	9,100

[1] Estimate. [2] Preliminary. [3] Recoverable. *Source: Bureau of Mines* T.132

Commodity Exchange Inc. (COMEX) Warehouse Stocks of Copper In Thousands of Short Tons

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1984	409.2	417.7	409.9	403.2	392.3	372.5	361.6	335.6	320.6	310.8	300.7	288.1
1985	276.3	258.2	238.8	224.8	214.3	201.0	186.4	167.7	155.0	149.0	136.4	124.6
1986	120.3	120.1	118.5	116.4	114.5	108.5	103.4	95.7	90.6	86.6	81.0	84.0
1987	93.3	102.8	108.9	97.5	88.4	71.4	65.3	69.0	73.5	89.2	66.2	33.7
1988	18.5	16.9	16.8	11.8	10.2	19.0	16.9	24.6	22.3	13.6	9.5	5.9
1989	13.4	14.9	17.3	29.7	21.2	25.2	23.0	20.4	15.2	11.4	10.4	9.1
1990	16.3	7.2	4.1	4.5	6.0	14.7	18.1	11.5	8.9	6.7	8.3	9.3
1991	20.2	14.7	16.4	29.3	30.9	24.6	25.1	35.5	33.6	24.5	26.8	28.7
1992												

Source: Commodity Exchange, Inc. N.Y. (COMEX) T.144

COPPER

U.S. Salient Statistics of Copper In Thousands of Metric Tons

	New Copper Produced										Stocks—Dec 31			Appar. Consumption[6]	
	From Domestic Ores						Imports[3]		Exports						
Year	Mines	Smelters	Refineries	From Foreign Ores[2]	Total New	Secondary Recovered[7]	Unmanufactured	Refined	Ore, Concentrate[4]	Refined[5]	N.Y. Commodity Exch.	Primary Producers (Refined)	Blister & Materials in Solution	Refined Copper (Reported)	Primary & Old Copper[8]
1982	1,147	941	1,050	176	1,227	518	525	258	195	31	248	268	233	1,658	1,762
1983	1,038	888	1,028	154	1,182	449	675	460	50	81	371	154	174	1,804	2,013
1984	1,103	990	1,090	75	1,165	461	552	445	69	91	251	121	245	2,123	2,107
1985	1,104	939	1,004	54	1,057	503	444	378	116	38	109	66	146	1,976	2,144
1986	1,144	908	1,074	N.A.	1,074	477	598	502	174	12	84	36	136	2,103	2,137
1987	1,244	972	1,127	N.A.	1,127	498	568	469	125	9	17	29	150	2,126	2,197
1988	1,417	1,043	1,406	N.A.	1,406	518	511	332	211	58	12	16	121	2,210	2,212
1989[1]	1,497	1,120	1,352	125	1,477	544	515	300	267	130	15	18	132	2,203	2,182
1990[1]	1,550	1,330			1,560	520	600	300	235	180	10	17	120	2,230	2,200

[1] Preliminary. [2] Also from matte, etc., refinery reports. [3] For consumption. [4] Blister (copper content)." [5] Ingots, bars, etc. [6] Withdrawals from total supply on domestic account. [7] From old scrap only. [8] Old scrap only. [9] Estimate. *Source: Bureau of Mines* T.133

Consumption of Refined Copper[2] in the United States In Thousands of Metric Tons

	By-Products						By Class of Consumer						
Year	Cathodes	Wire Bars	Ingot & Ingot Bars	Cakes & Slabs	Billets	Other	Wire Mills	Brass Mills	Chemical Plants	Ingot Makers	Foundries	Miscellaneous	Total Consumption
1982	1,211.0	195.1	45.1	92.4	82.2	32.4	1,232.8	393.2	.4	4.4	7.6	19.7	1,658.1
1983	1,448.1	77.4	53.2	115.3	101.8	8.2	1,269.9	500.3	.6	3.2	11.3	18.8	1,803.9
1984	1,635.4	72.1	74.4	127.7	118.5	8.2	1,401.7	514.0	.7	5.3	19.8	34.6	1,976.0
1985	1,563.4	70.3	64.2	115.8	139.6	22.8	1,401.7	564.9	.9	1.4	20.6	22.9	2,101.5
1986	1,717.7	52.5	105.9	81.6	127.9	16.9	1,491.9	564.9	.9	1.4	20.6	22.9	2,102.6
1987	1,849.2	14.4	113.3	68.4	86.5	20.0	1,595.6	514.5	1.2	1.4	16.6	22.5	2,151.8
1988[1]	1,967.4	14.0	54.2	63.0	99.0	12.7	1,667.2	493.2	1.0	2.6	14.5	31.9	2,210.4
1989[1]	1,981.6	6.1	34.4	64.9	104.9	11.2	1,698.4	461.0	.9	1.3	14.9	26.6	2,203.1
1990[3]							1,653	445					2,143

[1] Preliminary. [2] Primary & secondary. [3] Estimate. Source: Bureau of Mines T.134

U.S. Mine Production of Recoverable Copper, by Selected States In Thousands of Metric Tons

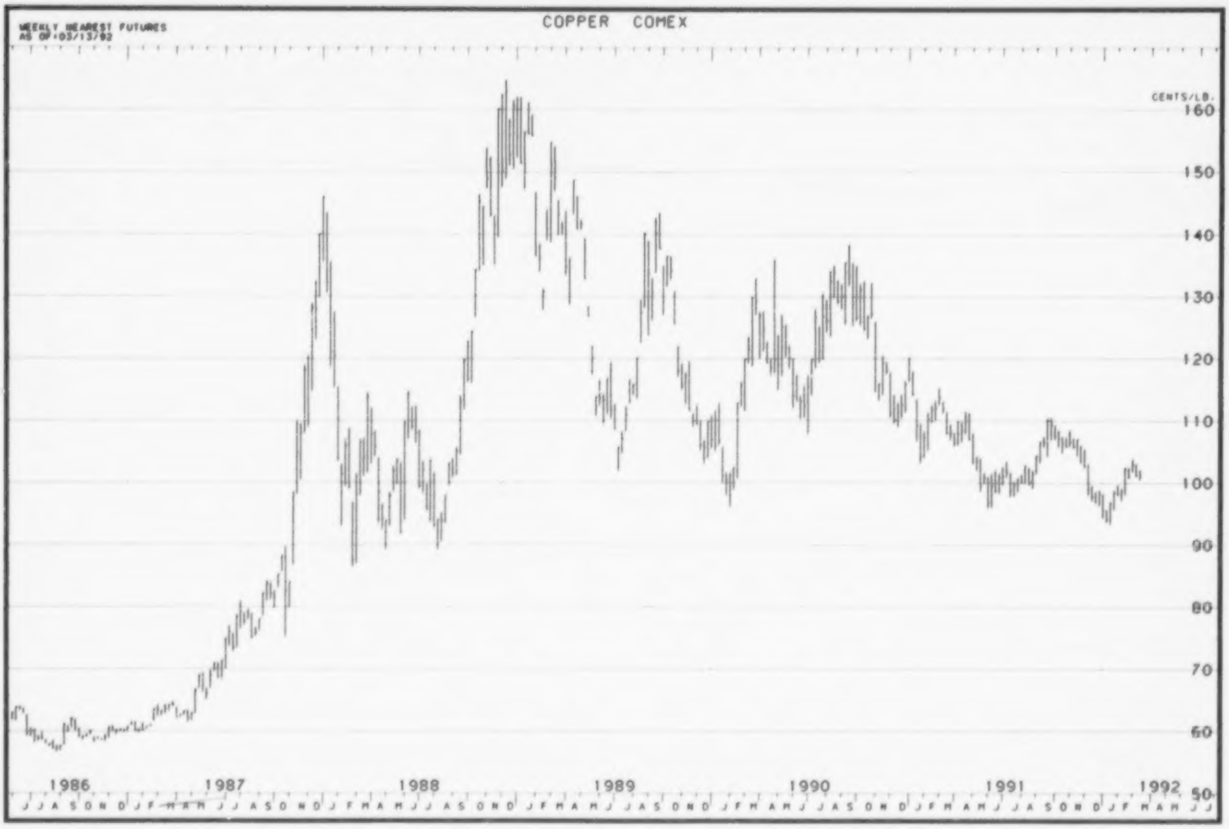
Year	Arizona	California	Colorado	Idaho	Michigan	Missouri	Montana	Nevada	New Mexico	Pennsylvania	Tennessee	Utah	Maine	Other States[2]	Total
1982	769.5	N.A.	.6	3.1	N.A.	7.9	65.0	N.A.	N.A.	—	N.A.	189.1	—	111.8	1,147.0
1983	678.2	N.A.	N.A.	3.6	—	7.7	33.3	N.A.	N.A.	—	N.A.	169.8	—	145.5	1,038.1
1984	746.5	N.A.	N.A.	3.7	—	5.8	N.A.	N.A.	N.A.	—	N.A.	N.A.	—	317.6	1,091.3
1985	795.6	Not Available												309.2	1,104.8
1986	786.1	Not Available												358.1	1,144.2
1987	751.0	Not Available							246.5					246.0	1,243.6
1988	842.7	Not Available							258.7					315.5	1,416.9
1989[1]	898.3	Not Available							259.4					339.7	1,497.5
1990[3]	1,100	Not Available													1,399

[1] Preliminary. [2] Also includes N.A. States. [3] Estimate. *Source: Bureau of Mines* T.135

U.S. Copper Refined from Scrap in Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	37.3	39.6	48.8	36.3	33.3	34.7	29.2	31.4	38.9	45.1	24.4	31.7	401.5
1984	26.8	21.0	24.3	26.4	27.3	25.3	22.9	31.0	29.0	24.4	19.9	20.6	298.8
1985	29.5	29.5	32.0	31.6	31.2	34.7	32.0	30.0	29.6	25.9	28.7	28.5	377.5
1986	42.5	44.9	45.2	42.6	42.4	40.8	39.1	37.4	43.9	43.5	36.0	36.7	405.9
1987	28.7	31.6	40.1	44.3	34.0	35.1	29.5	33.2	34.5	35.8	30.8	37.1	414.7
1988	34.2	35.2	42.9	38.1	38.0	38.4	30.4	37.9	42.3	37.0	37.5	40.2	453.3
1989	37.4	40.8	47.0	40.1	40.8	41.1	36.6	41.4	40.6	41.3	35.9	37.1	479.9
1990[1]	37.3	35.2	37.1	38.5	39.3	38.1	34.6	39.2	29.9	34.3	31.9	32.0	440.8
1991[1]	35.0	28.8	38.0	39.4	38.2	35.7							

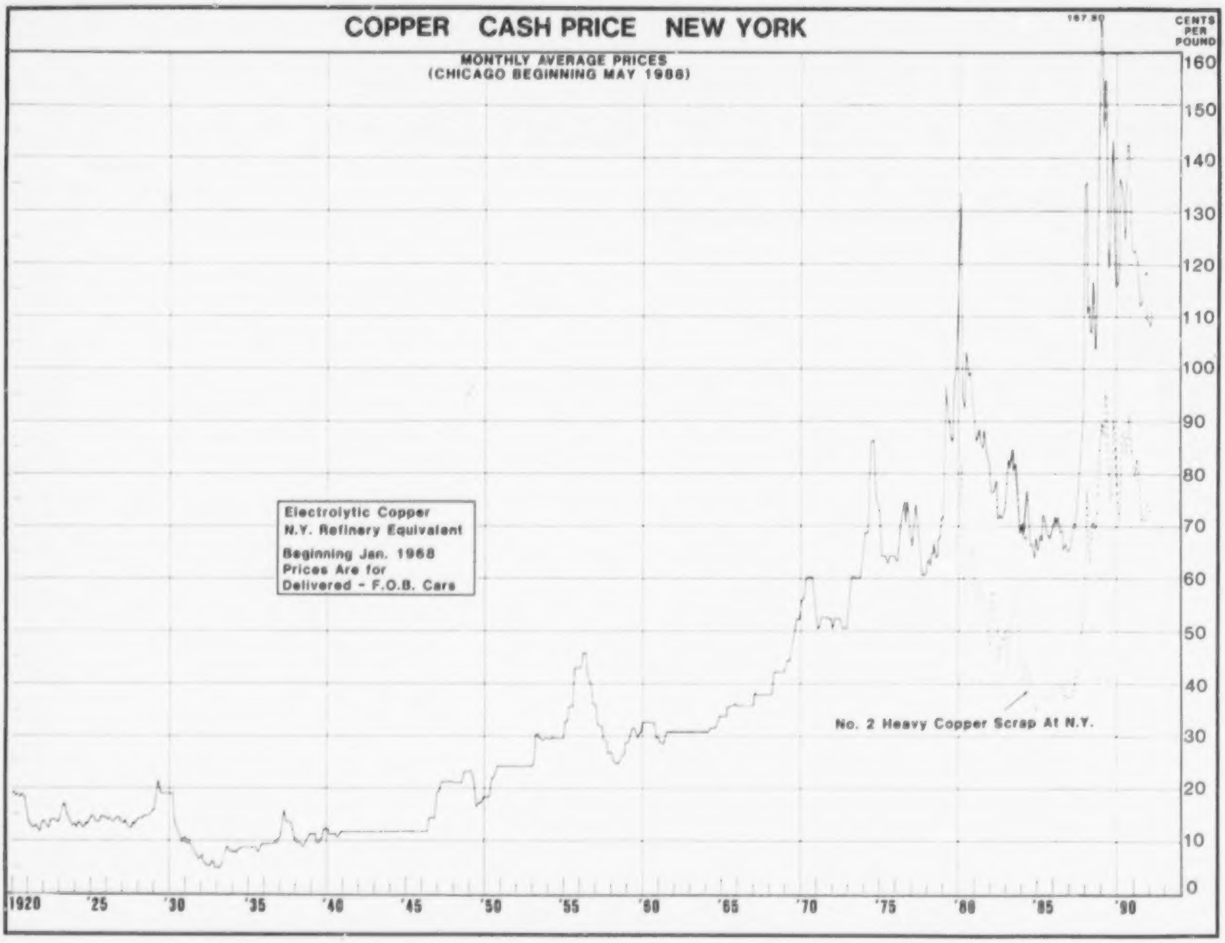
[1] Preliminary *Source: American Bureau of Metal Statistics, Inc.; Bureau of Mines*



High, Low & Closing Prices of May Copper Futures on the Commodity Exch., Inc., N.Y. (COMEX) ¢ Lb.

Year of Delivery	Year Prior to Delivery										Delivery Year					Life of Delivery Range
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1985 High	71.80	79.10	73.35	71.75	67.10	66.60	65.15	62.75	62.70	60.90	64.40	64.20	63.15	66.55	65.30	92.00
Low	65.60	72.00	69.10	65.35	61.80	62.00	58.90	58.45	59.05	56.40	56.20	57.95	59.10	60.80	60.60	56.20
Close	71.75	72.40	70.95	67.35	61.90	66.05	60.55	62.75	59.85	57.85	63.15	59.60	62.60	60.95	62.20	—
1986 High	65.65	68.50	68.00	64.35	66.15	64.70	62.90	63.85	63.45	65.35	68.00	67.50	69.15	66.30	63.95	69.15
Low	62.80	63.55	63.00	61.65	61.50	61.60	60.00	61.15	60.80	61.60	64.50	64.55	63.60	62.15	61.60	60.00
Close	65.65	63.55	63.95	62.00	63.45	63.05	60.55	61.50	62.10	64.45	67.15	66.05	66.15	62.25	62.85	—
1987 High	70.10	67.75	65.55	65.50	62.10	60.95	63.45	61.55	61.85	62.00	62.85	64.15	65.20	63.70	69.45	70.10
Low	66.35	63.80	63.65	61.30	59.90	58.60	57.75	59.25	59.65	60.40	60.60	60.85	62.40	61.30	62.40	57.75
Close	68.30	63.80	64.35	61.60	60.10	59.40	61.80	59.80	61.55	61.75	60.95	63.40	62.45	62.30	65.70	—
1988 High	65.65	64.50	68.35	69.50	74.25	75.65	80.30	86.50	104.40	108.20	109.00	100.80	107.30	107.50	103.90	109.00
Low	63.25	62.80	63.50	66.05	69.90	70.50	71.90	71.80	78.50	89.10	83.00	79.10	87.40	88.50	93.00	57.75
Close	63.25	63.30	65.35	69.20	73.70	72.70	77.90	77.20	95.60	108.20	85.85	86.30	105.30	93.80	98.80	—
1989 High	85.40	83.30	83.40	85.00	89.00	93.60	97.00	114.25	125.50	133.00	139.30	133.10	146.00	145.20	138.50	146.00
Low	79.10	77.30	77.45	78.70	81.60	83.70	89.80	95.30	103.40	120.20	123.25	117.00	130.10	126.70	108.50	73.20
Close	82.00	81.85	80.25	83.00	85.50	93.60	95.20	112.00	124.00	125.00	132.50	131.20	132.60	138.70	110.80	—
1990[1] High	—	116.00	114.60	108.40	102.45	118.90	118.00	120.70	113.50	107.00	110.00	109.30	122.70	125.00	127.10	127.10
Low	—	112.00	109.60	101.00	95.85	102.25	112.40	110.05	103.70	100.90	94.50	96.40	108.60	111.80	115.00	94.50
Close	—	113.80	111.70	101.40	101.70	118.90	115.25	111.00	106.80	105.20	97.30	108.25	122.40	116.90	115.85	—
1991 High	—	100.65	103.40	103.00	109.80	116.80	118.55	112.90	111.00	114.60	116.25	112.30	111.50	112.10	108.00	118.55
Low	—	97.30	97.95	97.50	101.70	109.30	109.00	105.70	105.40	104.35	102.10	103.90	105.20	105.80	97.80	97.30
Close	—	98.80	98.30	103.00	109.45	114.70	109.70	108.60	105.70	113.75	105.00	111.50	106.20	105.90	98.00	—
1992 High	104.40	103.90	101.40	96.70	98.75	100.50	102.90	104.10	103.50	100.70						
Low	100.30	100.45	94.00	93.30	94.70	96.30	98.85	100.20	99.90	96.30						
Close	100.30	100.50	94.10	95.95	97.80	100.20	101.40	102.85	100.10	97.45						

[1] HG Grade Contract. *Source: Commodity Exchange, Inc. of N.Y. (COMEX)* T.141



Producers' Prices of Electrolytic (Wirebar) Copper, Delivered U.S. Destinations In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	66.23	68.32	67.19	72.17	71.89	68.86	68.53	68.32	67.66	68.60	68.37	70.10	68.85
1986	71.57	70.21	71.78	70.55	68.69	69.15	65.47	64.12	66.82	65.61	65.06	65.91	67.91
1987	67.29	67.87	70.50	69.83	73.54	76.71	83.10	84.94	88.04	91.52	109.59	134.71	84.80
1988	135.63	110.58	111.99	107.51	106.91	116.46	107.90	103.62	118.04	126.38	159.08	167.80	114.50
1989	164.21	146.17	154.89	150.26	132.72	121.45	119.27	133.75	143.60	137.61	123.59	115.64	136.93
1990	116.36	119.35	136.22	134.38	132.32	124.93	133.91	142.53	142.45	138.41	127.76	124.39	131.09
1991	122.59	122.73	121.24	120.35	113.11	111.72	111.90	113.48	118.92	118.90	109.71	109.83	116.21

Source: American Metal Market T.136

Average Open Interest of Copper Futures[1] at COMEX In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	88,669	93,069	81,959	88,539	82,619	83,776	81,368	78,195	76,237	77,407	77,404	79,283
1986	87,280	83,713	86,713	79,370	71,169	68,505	63,529	61,827	62,779	65,073	73,414	78,164
1987	77,851	77,433	76,967	70,108	74,628	84,725	85,391	75,725	65,678	59,073	47,279	41,781
1988	43,177	41,220	35,505	34,787	31,410	35,949	31,750	29,520	34,946	35,724	36,607	33,094
1989	33,397	33,756	34,664	35,694	30,459	27,606	24,462	25,128	23,742	19,439	14,955	2,898
1990	31,401	33,908	34,654	34,405	31,552	30,113	32,780	31,515	32,578	36,145	35,088	30,128
1991	34,927	35,978	35,026	34,096	44,153	39,879	33,100	33,333	40,347	42,028	41,618	44,283

[1] High grade copper contracts from 1990. *Source: Commodity Exchange, Inc. of N.Y. (COMEX)* T.142

U.S. Imports (for Consumption) of Copper (Unmanufactured), by Sources and Types In Ths. Tonnes

Year	Ore & Concentrates	Blister	Matte	Refined	Scrap	Australia	Canada	Mexico	W. Germany	Chile	Peru	Philippines	Yugoslavia	Zaire	Zambia	South Africa	Total U.S. Imports
1982	118.1	97.4	4.1	258.4	28.1	3.7	111.0	64.4	—	233.0	26.8	27.1	—	19.6	10.5	—	506.0
1983	90.6	46.4	3.3	459.6	23.1	—	153.8	44.7	—	292.4	38.9	11.4	—	29.1	24.7	14.0	622.9
1984	11.1	38.9	2.1	444.7	23.0	3.8	177.6	9.5	—	149.4	63.0	6.7	—	28.0	59.5	.5	519.8
1985	2.9	13.0	4.0	377.7	23.0												420.6
1986	4.2	34.5	.7	502.0	27.2	1.1	223.5	24.1	.3	182.5	46.9	1.0	—	36.0	28.7	10.1	568.7
1987	2.3	24.1	6.9	469.2	33.1	—	236.8	18.7	24.0	206.8	37.2	—	4.2	24.0	19.8	9.8	535.6
1988	2.8	98.5	5.5	331.7	37.2	—	204.1	14.6	5.2	131.1	16.5	—	2.0	33.4	—	10.7	475.5
1989[1]	46.5	77.2	2.3	300.1	31.6	1.2	568.2	74.4	1.3	331.9	33.8	—	—	55.3	—	3.7	457.7
1990[1]	115	45	7	264	36												540
1991[3]	207	88	—	271	15												

Note: Includes refined; black, blister, & converter; scrap; & copper content of ore, matte, and regulus. [1] Preliminary. [2] Estimate. *Source: Department of Commerce; Bureau of Mines*

T.137

United States Exports of Refined Copper[1] to Selected Countries In Thousands of Metric Tons

Year	Total U.S. Exports	United Kingdom	China Mainland	Belgium	Brazil	Canada	France	Germany	Korea Rep.	Italy	Netherlands	Taiwan	Sweden	Mexico	Japan
1982	30.6	1.3	16.1		.4	2.8	1.1	1.9		.1	3.3	—	—	—	.8
1983	81.4	.4	2.2	.7	—	1.7	.6	2.2		—	60.6	1.0	.1	5.3	5.7
1984	91.4	.7	.1	—	—	2.9	.8	1.2		—	6.4	3.2	—	2.8	71.2
1985	37.9	.7	—	.5	—	3.5	.3	1.3			17.3	1.5		4.2	5.0
1986	12.5	2.2	—	—	.1	3.7	.4	1.4	1.3	.1	—	2.2	.1	.2	—
1987	9.2	.9	—	—	.1	1.7	.4	.4	1.8	.2	—	.2	—	.5	2.5
1988	58.3	2.3	3.5	.2	.1	3.8	1.5	1.3	6.1	4.5	8.7	1.6	.1	8.5	13.5
1989	130.2	1.1	12.8	—	—	4.7	.7	1.3	1.2	.6	.7	47.8	—	7.3	47.5
1990[2]	173	.9	3.5	2.0	—	2.0	1.6	1.0	7.9	.7	3.4	66.2	—	5.6	103.2
1991[3]															

[1] Bars, ingots or other forms. [2] Preliminary. [3] Estimate. *Source: Department of Commerce*

T.138

Dealers' Buying Price of No. 2 Heavy Copper Scrap in the Chicago Area[1] In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	57.43	57.20	53.76	53.99	53.38	43.24	47.12	46.49	47.83	48.79	48.61	50.75	50.73
1983	42.55	46.71	51.50	51.50	53.74	54.50	54.50	53.54	51.74	48.12	43.30	42.50	49.52
1984	41.17	40.60	43.59	44.50	43.30	42.21	39.36	38.50	38.08	36.20	34.50	35.67	39.81
1985	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50
1986	38.23	39.50	39.50	39.50	39.50	39.50	39.50	37.79	37.50	37.50	37.50	37.50	38.59
1987	37.50	37.50	37.86	39.50	41.15	42.50	44.68	49.07	49.50	53.32	55.39	64.73	46.06
1988[1]	77.10	68.00	63.50	63.12	70.07[1]	70.59	69.80	69.54	72.36	78.93	83.66	85.50	72.68
1989	89.83	87.13	95.33	95.95	91.14	80.27	74.45	75.54	86.50	90.32	86.00	80.25	86.06
1990	78.27	71.00	78.73	88.00	88.00	84.38	84.00	85.50	91.84	89.50	86.48	83.00	84.06
1991	83.00	79.50	82.21	82.50	78.66	72.40	71.00	71.00	72.05	75.39	75.08	74.50	76.44

[1] Prior to May 1988, prices are for the N.Y. area. *Source: American Metal Market*

T.140

Volume of Trading of Copper Futures[1] at COMEX In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	112,118	166,562	135,434	179,854	174,157	249,276	197,828	245,973	169,909	231,771	273,546	226,257	2,362,625
1983	306,001	381,645	320,574	278,655	226,482	309,540	213,832	295,470	188,201	230,063	289,111	147,340	3,186,914
1984	199,461	259,881	217,635	269,765	196,382	223,551	152,424	215,226	149,465	170,568	279,151	172,856	2,514,311
1985	254,052	261,784	167,686	310,487	215,079	209,506	146,396	195,882	138,803	178,728	200,142	166,007	2,444,552
1986	190,983	206,513	197,818	240,770	106,750	200,547	89,818	145,468	123,779	121,361	162,963	85,439	1,872,209
1987	124,845	178,598	165,216	170,827	208,696	306,029	272,794	214,181	193,035	276,491	278,985	179,481	2,569,178
1988	210,209	222,625	194,722	151,177	130,289	179,991	120,088	142,945	141,899	186,220	258,725	173,569	2,112,459
1989	216,282	200,945	226,425	201,677	193,956[1]	174,055	132,793	173,273	151,097	176,822	154,241	93,243	2,096,547
1990	152,156	148,766	179,445	181,726	164,489	163,372	141,602	154,383	156,924	161,814	133,718	114,790	1,853,185
1991	159,621	131,044	108,191	150,390	148,777	139,207	110,025	149,702	132,354	125,757	153,110	135,132	1,643,310

[1] Beginning May 1989 thru Dec. 1989 High Grade Contracts are included (May total was 353 contracts.) *Source: Commodity Exchange, Inc. of N.Y. (COMEX)*

T.143

COPPER

U.S. Foreign Trade of Refined Copper In Thousands of Metric Tons

Year		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	Imports	56.1	31.8	51.0	60.3	43.5	49.6	63.0	33.6	29.1	51.9	26.9	24.6	521.3
	Exports	17.5	14.4	8.9	6.8	14.7	1.6	14.0	2.3	2.2	1.9	2.8	6.9	93.9
1985	Imports	46.7	21.8	31.8	22.3	26.8	41.5	27.2	25.7	34.6	22.0	40.4	49.9	390.7
	Exports	5.3	5.8	10.8	3.7	1.3	3.9	5.7	6.8	1.5	1.3	.9	1.1	48.1
1986	Imports	51.9	43.9	49.5	38.2	54.9	36.8	36.0	36.0	37.3	31.7	55.6	31.2	503.1
	Exports	1.3	1.5	1.2	1.0	2.4	.9	.8	1.8	1.7	.6	.9	.8	14.9
1987	Imports	34.4	38.7	55.8	38.9	60.2	69.3	37.0	45.0	28.6	35.9	40.8	31.1	515.6
	Exports	.8	1.9	2.4	2.8	.8	1.1	.6	.5	.8	.7	2.3	3.2	17.9
1988	Imports	49.4	38.0	39.0	33.7	25.9	25.1	22.3	27.7	25.7	44.2	39.2	20.2	390.4
	Exports	4.9	2.0	3.8	5.7	7.7	9.5	3.5	4.4	14.3	2.3	4.0	4.5	66.5
1989	Imports	32.7	24.8	18.7	20.9	24.1	25.9	20.9	24.4	28.1	30.5	32.3	16.9	300.1
	Exports	6.2	4.8	5.9	13.5	4.3	6.6	21.4	15.8	23.4	13.7	6.3	12.1	130.2
1990[1]	Imports	24.7	15.8	26.5	25.3	31.3	24.0	20.6	18.0	21.4	18.4	20.8	16.7	263.6
	Exports	18.1	20.8	12.2	7.6	15.6	12.2	23.9	20.1	22.4	21.5	17.2	19.8	211.3
1991[1]	Imports	22.7	27.1	21.7	30.9									
	Exports	33.6	21.4	37.4	16.8									

[1] Preliminary. *Source: U.S. Dept. of Commerce.*

Refined Copper Stocks in the U.S.A. In Thousands of Short Tons (Recoverable Copper Content)

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1976	360.7	363.4	370.9	347.8	343.0	325.2	317.1	350.4	355.8	356.1	372.8	416.5
1977	473.8	469.3	487.0	472.3	442.1	447.6	435.0	408.9	370.6	409.4	418.0	456.9
1978	471.1	488.7	491.6	470.2	480.5	465.5	464.0	430.9	418.0	405.9	416.4	408.9
1979	367.0	318.4	287.5	262.1	237.4	197.8	176.0	174.6	158.0	154.6	148.6	167.3
1980	186.3	203.5	228.2	237.1	269.1	277.3	295.7	310.6	301.0	274.6	265.0	246.0
1981	253.0	261.6	249.4	236.8	245.5	243.4	264.7	276.9	276.0	275.5	281.6	301.2
1982	338.6	351.9	375.9	387.3	409.8	422.5	448.1	463.7	449.9	436.2	438.2	470.8
1983	484.5	489.6	501.6	508.9	524.1	519.4	498.7	509.0	522.7	509.1	514.2	505.2
1984	475.3	497.8	499.6	483.3	478.3	463.4	483.2	493.4	490.7	467.1	475.2	457.3
1985	469.7	452.9	380.9	368.2	358.4	363.2	344.1	331.4	310.9	275.7	257.3	264.1
1986	270.7	271.0	261.6	242.0	231.1	201.4	188.0	209.6	214.4	188.1	189.0	211.3
1987	238.4	211.5	206.8	170.1	175.7	161.6	136.4	141.0	140.4	151.3	121.1	86.7
1988	81.4	79.8	81.6	89.0	83.1	75.7	42.0	48.8	52.5	42.9	40.6	39.8
1989	56.3	67.5	56.3	60.6	54.3	54.4	49.1	61.8	66.1	42.3	48.1	48.2
1990	72.7	42.4	38.6	45.2	55.9	60.2	67.5	67.2	67.6	27.4	27.9	45.4
1991[1]	72.3	72.8	53.2	68.6	63.2	52.8	52.4	71.4	64.4	48.5	47.6	

[1] Preliminary. *Source: American Bureau of Metal Statistics, Inc.* T.145

Refined Copper Stocks Outside the U.S.A. In Thousands of Short Tons (Recoverable Copper Content)

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1976	1,135	1,150	1,149	1,086	1,048	1,045	1,040	1,080	1,112	1,102	1,102	1,141
1977	1,117	1,158	1,200	1,166	1,183	1,185	1,195	1,210	1,229	1,247	1,240	1,225
1978	1,201	1,231	1,139	1,139	1,104	1,099	1,052	1,059	1,001	960.2	962.0	963.1
1979	942.2	878.2	862.4	765.1	758.8	756.7	727.2	687.1	696.6	648.2	635.4	641.3
1980	619.5	598.3	560.9	534.6	516.5	525.9	531.2	530.9	553.2	527.9	489.1	472.6
1981	476.2	485.2	471.0	463.0	458.8	449.8	446.0	454.9	454.7	433.4	419.4	403.0
1982	432.5	446.3	448.4	459.6	452.0	458.7	479.3	492.0	503.6	522.7	575.1	642.9
1983	699.9	760.8	766.4	759.1	795.5	780.0	722.2	683.0	757.4	767.2	765.2	810.4
1984	832.8	817.5	730.0	653.0	618.5	519.3	551.9	526.5	516.0	493.9	483.9	430.0
1985	425.0	420.7	385.7	361.9	364.6	380.4	368.8	464.0	546.7	558.4	533.6	486.6
1986	502.8	501.5	451.8	435.7	422.6	418.7	396.8	430.4	455.1	455.4	458.5	464.8
1987	473.7	467.5	410.5	397.5	387.4	348.5	337.8	336.8	341.1	314.7	254.9	269.6
1988	260.9	292.1	301.1	290.2	277.4	317.9	329.9	374.7	348.7	310.9	282.8	272.2
1989	337.5	325.7	341.0	350.3	406.5	385.7	374.2	389.8	335.8	368.7	348.1	358.3
1990	362.3	382.0	335.6	320.0	332.6	356.3	291.8	370.9	417.9	484.6	483.0	447.6
1991[1]	439.5	474.9	458.9	511.9	561.4	619.9	625.1	645.7	694.5	685.4		

[1] Preliminary. *Source: American Bureau of Metal Statistics, Inc.* T.150

Refined Copper Production Outside the U.S.A. In Thousands of Short Tons (Recoverable Copper Content)

	Refined													Crude	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Primary	Secondary
1982	398.2	381.0	442.6	391.8	365.2	403.9	368.4	365.8	386.1	405.8	411.8	372.6	4,693	—5,065—	
1983	386.8	366.3	411.8	400.0	401.2	418.0	381.9	404.3	395.9	404.5	393.1	409.5	4,773	—5,201—	
1984	380.3	376.9	412.4	375.1	374.1	382.5	357.4	381.5	373.8	405.2	380.8	358.7	4,559	—5,114—	
1985	371.6	338.8	388.5	376.1	377.4	351.4	384.2	385.6	380.4	387.6	385.5	394.9	4,522	—5,217—	
1986	366.5	351.5	401.7	409.7	373.1	361.2	361.7	374.8	400.3	407.4	396.4	403.6	4,608	—5,132—	
1987	385.8	375.4	410.6	412.2	399.9	403.6	393.3	370.6	391.2	402.7	402.5	407.5	4,755	—5,233—	
1988	397.7	387.8	434.2	370.6	389.4	391.5	366.6	386.9	365.9	412.8	417.0	414.9	4,735	—5,210—	
1989	387.8	372.7	411.9	404.3	430.1	388.7	409.5	413.5	421.7	436.1	434.0	402.7	4,913	—5,439—	
1990	423.7	396.7	424.6	412.8	414.1	395.6	372.6	407.1	404.6	422.6	417.4	411.0	4,902	—5,278—	
1991[1]	435.7	399.3	439.4	428.6	443.9	424.7	405.5	411.0	420.9						

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[1] Preliminary. *Source: American Bureau of Metal Statistics, Inc.* T.148

Refined Copper Production in the U.S.A. In Thousands of Short Tons (Recoverable Copper Content)

	Refined													Crude	
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Primary	Secondary
1982	117.5	123.4	121.5	116.4	107.5	108.6	81.8	77.6	80.6	80.1	92.1	90.8	1,198	—1,026—	
1983	97.3	100.6	131.9	125.5	112.2	114.5	73.1	90.6	91.2	110.4	89.1	100.2	1,237	—1,077—	
1984	98.8	100.7	117.1	120.5	127.9	125.6	123.0	126.1	101.8	119.5	95.4	101.4	1,358	—1,270—	
1985	113.5	101.2	118.8	122.4	124.1	100.8	99.9	96.8	93.0	112.9	119.7	106.7	1,310	—1,387—	
1986	109.5	98.3	103.5	115.0	122.4	112.1	109.3	108.9	106.7	114.4	116.6	138.1	1,355	—1,323—	
1987	118.0	110.5	105.4	127.7	118.5	95.5	107.7	106.4	121.8	131.3	123.3	127.7	1,394	—1,308—	
1988	124.5	127.2	145.6	122.5	133.7	116.7	112.7	146.0	133.8	121.1	137.7	131.8	1,553	—1,527—	
1989	129.5	128.1	137.2	118.3	132.2	142.6	121.3	150.8	116.5	137.0	127.4	130.7	1,572	—1,555—	
1990	136.0	122.0	150.4	140.1	147.5	136.1	125.5	132.5	130.1	141.6	141.0	125.5	1,628	—1,630—	
1991[1]	129.0	127.7	134.9	119.7	137.1	124.8	136.8	142.7	135.6	153.1					

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[1] Preliminary. *Source: American Bureau of Metal Statistics, Inc.* T.149

Refined Copper Deliveries to Fabricators in the U.S.A.
In Ths. of Short Tons (Recoverable Copper Content)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	134.6	112.2	131.5	114.2	121.0	111.4	106.2	110.6	131.8	113.3	78.4	119.2	1,384
1983	126.2	141.1	185.3	156.0	165.9	164.4	91.0	105.2	141.2	137.1	110.2	145.3	1,669
1984	118.3	146.1	185.7	184.4	190.7	163.8	150.7	159.3	166.0	167.1	149.5	124.2	1,906
1985	170.2	188.7	159.8	153.0	144.3	135.2	122.3	130.0	153.3	151.5	137.9	120.7	1,767
1986	123.8	120.1	150.5	155.3	164.5	131.5	113.1	127.1	160.7	141.1	114.7	128.4	1,631
1987	160.2	138.7	166.9	152.3	165.6	152.3	131.6	127.2	141.4	188.3	192.7	168.2	1,885
1988	152.0	151.5	162.5	149.6	150.1	161.2	116.5	164.7	169.6	148.2	159.1	139.0	1,824
1989	127.8	147.7	148.4	141.1	153.2	168.4	131.4	173.2	162.1	156.8	149.2	121.9	1,781
1990[1]	167.4	132.8	163.3	156.6	153.3	144.5	129.5	132.5	173.3	140.9	130.7	108.6	1,733
1991[1]	128.4	153.3	125.3	124.1	152.5	114.5	123.5	151.5	165.4	162.4			

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[1] Preliminary. *Source: American Bureau of Metal Statistics, Inc.* T.147

Refined Copper Deliveries to Fabricators Outside the U.S.A.
In Ths. of Short Tons (Recoverable Copper Content)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	373.4	380.1	423.6	387.4	348.3	365.4	341.4	342.8	354.9	343.5	331.3	301.6	4,294
1983	303.2	322.9	371.1	325.7	392.2	454.4	407.4	308.3	360.7	389.4	350.2	397.4	4,383
1984	375.0	448.8	477.8	377.1	453.1	358.8	372.5	371.5	382.7	394.6	420.7	360.6	4,793
1985	356.6	372.1	408.2	369.8	379.8	395.9	300.4	319.9	384.6	422.0	419.6	375.9	4,505
1986	364.5	396.9	403.4	403.2	375.6	387.9	331.0	334.1	376.2	384.9	380.9	380.8	4,519
1987	386.0	413.0	413.9	406.8	426.7	401.8	384.1	359.4	416.4	468.8	377.1	396.[illegible]	4,851
1988	359.6	375.2	448.7	385.1	366.8	403.2	340.9	405.9	401.8	437.4	455.6	356.6	4,737
1989	426.0	369.9	411.8	360.9	459.0	398.0	386.8	464.2	393.2	456.9	423.0	399.1	4,949
1990[1]	419.9	466.3	436.7	392.9	408.3	466.7	303.7	373.5	370.8	448.9	469.1	420.7	4,972
1991[1]	413.5	421.5	404.2	387.5	382.8	436.8	385.4	362.2	422.9				

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[1] Preliminary. *Source: American Bureau of Metal Statistics, Inc.* T.146

Corn

World corn production in 1991/92 was forecast by USDA to exceed 483 million tonnes, against the previous season's 479 million. The U.S. remained the largest producer. China was second with a crop of 95 million tonnes, down 2 percent from the prior year. Eastern European countries harvested almost 31 million tonnes, an increase of nearly 50 percent from a year earlier. The EC produced over 26 million tonnes, a 20 percent gain, while Brazil's output of 26 million tonnes was slightly above the 1990/91 level. The former USSR harvested 11 million tonnes of corn, 12 percent more.

Among the major exporters, Argentina's crop of 7.2 million tonnes was off 8 percent, while South Africa's harvest of 8 million was 2 percent lower. Thailand's crop of 3.7 million tonnes was also smaller than the previous year.

World utilization of corn in 1991/92 was forecast to expand by over 3 percent to 483 million tonnes. The U.S., China, the EC, the USSR and Japan were the major consumers, using corn mostly for feed.

Global trade was slated to decline by 1 percent to over 56 million tonnes. Larger crops in the EC and Mexico reduced their import needs. The U.S. market share slipped to 71 percent. U.S. exports were forecast at 40 million tonnes, down 10 percent. However, foreign exporters were to ship a combined 16 million tonnes, 30 percent more. Argentine exports were slated to increase by 500,000 tonnes to 4.2 million, while South African sales were to fall. Among the importers, the former USSR was expected to reduce purchases by 1.1 million tonnes to 9 million, and the Eastern European countries were to import less.

World ending stocks of corn in 1991/92 were due to fall slightly to 81 million tonnes. In comparison, inventories were 147 million tonnes in 1987/88.

One notable development was that the U.S. granted export credits to the Soviets, enabling them to purchase grains and protein meal. If the Soviets showed the ability to repay these loans, more credits were to be made available. Several countries of the former Soviet Union were very short of feed grains and protein meal. However, as these states move toward free markets, they may be able to expand their feedgrain production.

The U.S. corn crop was 7.49 billion bushels, 6 percent less than a year earlier. Area planted to corn rose by 1.7 million acres to 75.9 million. Producers had the flexibility under the Farm Bill to plant some of their acreage to other crops without losing program benefits. Acreage harvested was 68.7 million, an almost 3 percent increase. There were torrential spring rains in Iowa. Later, hot and dry conditions dominated the eastern Corn Belt. Rains in August provided some relief for the crop. However, yields declined significantly in Pennsylvania, Indiana, Ohio and Illinois.

Iowa was the leading producer with a crop of 1.38 billion bushels, down 12 percent from the year before. The Illinois crop of 1.22 billion bushels was 8 percent lower, while output in Nebraska, Kansas and the Southeast expanded. The national average yield was 108.9 bushels per acre, against 118.5 bushels the previous season.

Domestic stocks at the start of 1991/92 were 1.52 billion bushels, 13 percent above a year earlier. Total supplies were just over 9 billion bushels, down 3 percent. Increased feeding of hogs, broilers and turkeys, as well as greater industrial use, were expected. Feed use was slated to rise to 4.8 billion bushels from the prior season's 4.7 billion. Use of corn for food, seed and industrial purposes was to grow almost 2 percent from a year earlier. Sweetener and ethanol production rose slightly.

U.S. exports of corn were put at 1.575 billion bushels, or 9 percent less than the year before. In 1989/90, corn exports were as high at 2.4 billion bushels. Reasons for the decline in export activity included competition from the EC and Argentina and decreased demand from Mexico, South Korea and the Soviets. The availability of substitute grains, like barley and feed-grade wheat, also cut into corn sales. Major buyers of U.S. corn were Japan, the former USSR, Taiwan, South Korea and Mexico.

With a smaller crop, domestic ending stocks of corn in 1991/92 were slated to decline 16 percent to 1.3 billion bushels. Corn stocks have been trending lower for several seasons.

U.S. Farm Program

The target price for corn was $2.75 a bushel in 1991 and 1992, while the loan rate was $1.62 in 1991 and $1.72 in 1992. Growers had the flexibility to plant part of their corn acreage to other crops without losing program benefits.

Futures Markets

Corn futures and options are traded on the Chicago Board of Trade.

World Production of Corn or Maize In Millions of Metric Tons

Crop Year	Argentina	Brazil	Canada	China	France	Hungary	India	Indonesia	Italy	Mexico	Romania	South Africa	Thailand	United States	USSR	Yugoslavia	World Total
1988–9	5.0	26.1	5.4	77.4	14.6	6.0	8.3	5.2	6.3	10.1	10.0	12.4	4.2	125.2	16.0	7.7	400.7
1989–90	5.2	21.8	6.4	78.9	13.1	6.7	9.4	5.0	6.4	9.8	9.0	8.9	4.1	191.2	15.3	9.3	462.5
1990–1[1]	7.8	23.5	7.2	96.8			9.4	5.2				8.2	3.8	201.6	9.8		479.2
1991–2[2]	7.2	26.0	7.3	95.0			8.4	5.2				8.0	3.7	190.2	11.0		483.1

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.151

World Coarse Grains Supply & Demand In Millions of Metric Tons/Hectares

Crop Year	Area Harvested	Yield	Production	World Trade[1]	Utilization Total[2]	Ending Stks[3]	Stocks as % of Util
1984/85	334.6	2.44	815.8	100.4	782.6	143.9	18.4
1985/86	341.3	2.47	843.1	83.2	778.8	208.2	26.7
1986/87	336.5	2.47	831.8	83.3	806.0	234.0	29.0
1987/88	324.3	2.45	793.9	83.2	814.9	213.0	26.1
1988/89	326.1	2.24	731.3	94.2	795.6	149.3	18.8
1989/90[4]	323.0	2.49	802.7	100.0	828.1	123.8	15.0
1990/91[4]	317.9	2.62	833.4	85.5	821.7	135.5	16.5
1991–2[5]	321.7	2.50	803.8	83.3	809.8	129.4	16.0

Note: "Stocks as percent of utilization" represent the ratio of marketing year ending stocks to total utilization. [1] Trade data as expressed in this table exclude intra-EC trade. The trade year is October/September. [2] For countries for which stocks data are not available (excluding the USSR) utilization estimates represent "apparent" utilization, i.e., include annual stock level adjustments. [3] Stocks data are based on an aggregate of differing local marketing years and should not be construed as representing world stock levels at a fixed point in time. Stocks data are not available for all countries and exclude those such as the People's Republic of China and parts of Eastern Europe. World Stock Levels have been adjusted for estimated year-to-year changes in USSR grain stocks, but do not purport to include the absolute level of USSR grain stocks. [4] Preliminary. [5] Projection. *Sources: Prepared or estimated on the basis of official statistics of foreign governments, other foreign source materials, reports of U.S. Agricultural Attaches and Foreign Service Officers, results of Office Research and Related Information.* 150a

Acreage and Supply of Corn in the United States In Millions of Bushels

Year Beginning Sept.[5]	Planted All Purposes	Harvested For Grain	Harvested For Silage	Harvested For Forage	Yield, Per Harv. Acre-Bus.	Carry-over, Sept. 1 On Farms[5]	Carry-over, Sept. 1 Off Farms[5]	Carry-over, Sept. 1 Others[5]	Carry-over, Sept. 1 Total	Grain Production	Imports[2]	Total (All Supply Grain)
	In Millions of Acres											
1984–5	80.5	71.9	7.5	.3	106.7	347.9	— 375.4—		1,006	7,672	1.7	8,680
1985–6	83.4	75.2	7.2	.3	118.0	678.9	— 701.8—		1,648	8,875	10.0	10,534
1986–7	76.7	68.9	6.4		119.4	2,049.4	—1,990.1—		4,040	8,226	1.7	12,267
1987–8	65.7	59.5	6.0		119.8	2,284.5	—2,597.2—		4,882	7,131	3.4	12,016
1988–9	67.6	58.3	8.3		84.6	2,002.8	—2,256.8—		4,259	4,929	2.8	9,191
1989–90	72.3	64.7	6.6		116.3	967.5	— 962.9—		1,930	7,526	1.9	9,458
1990–1[1]	74.2	67.0			118.5	754.8	— 589.7—		1,344	7,933	3.9	9,281
1991–2[4]	75.9	68.7			108.9	371.1	—1,149.8—		1,521	7,486	2.0	9,009

[1] Preliminary. [2] Includes grain equivalent of cornmeal & flour. [3] Interior mills & elevators and terminal mkts. [4] Estimate. [5] Data prior to 1986–7 are as of Oct 1. *Source: Economic Research Service, U.S.D.A.* T.152

U.S. Corn Supply and Disappearance In Millions of Bushels

Year & Periods Begin. Sept. 1	Supply: Beginning Stocks	Supply: Production	Supply: Imports	Supply: Total Supply	Disappearance: Domestic Use: Food, Alcohol & Industrial	Disappearance: Domestic Use: Seed	Disappearance: Domestic Use: Feed & Residual	Disappearance: Domestic Use: Total	Disappearance: Exports	Disappearance: Total Disappearance	Ending Stocks: Gov't. Owned[1]	Ending Stocks: Privately Owned[2]	Ending Stocks: Total
1987–8	4,882	7,131	3.4	12,016	1,212	17.2	4,812	6,041	1,716	7,757	835.0	3,424	4,259
Sep.–Nov.	4,882	7,131	.6	11,954	292.0	0	1,493	1,785	398.0	2,183	1,683	8,088	9,771
Dec.–Feb.	9,771	—	.9	9,772	282.0	0	1,446	1,728	408.3	2,136	1,768	5,868	7,636
Mar.–May	7,636	—	1.6	7,637	315.0	16.7	956.2	1,288	513.8	1,802	1,305	4,531	5,836
June–Aug.	5,836	—	.9	5,836	323.0	.5	838.4	1,163	414.4	1,577	835.0	3,424	4,259
1988–9[3]	4,259	4,929	2.8	9,191	1,232	18.7	3,981	5,232	2,028	7,260	362.5	1,568	1,930
Sep.–Nov.	4,259	4,929	.6	9,188	295.0	0	1,351	1,646	470.8	2,117	611.0	6,461	7,072
Dec.–Feb.	7,072	—	.6	7,072	285.0	0	1,081	1,366	502.6	1,868	465.0	4,739	5,204
Mar.–May	5,204	—	1.2	5,205	322.2	16.8	855.2	1,194	591.6	1,786	417.7	3,002	3,419
June–Aug.	3,419	—	.4	3,420	330.2	1.9	693.8	1,026	463.4	1,489	362.5	1,568	1,930
1989–90[4]	1,931	7,526	2.0	9,458	1,271	19.0	4,458	5,748	2,367	8,115	233.0	1,112	1,345
Sep.–Nov.	1,931	7,527	.6	9,458	298.0	0	1,499	1,797	582.3	2,379	628.2	6,451	7,079
Dec.–Feb.	7,079	—	.4	7,080	297.0	0	1,289	1,586	681.6	2,267	537.2	4,276	4,813
Mar.–May	4,813	—	.6	4,813	338.3	16.7	1,014	1,369	600.8	1,970	299.3	2,544	2,843
June–Aug.	2,843	—	.2	2,843	337.7	2.3	656.3	996.3	502.6	1,499	233.0	1,112	1,345
1990–1	1,345	7,933		9,278	1,306	19.3	4,709	6,034	1,727	7,761	371.1	1,150	1,521
Sept.–Nov.	1,345	7,933	.9	9,278	307.0	0	1,648	1,955	383	2,338	205.9	6,734	6,940
Dec.–Feb.	6,940	—	.3	6,941	305.0	0	1,376	1,681	471	2,152	195.6	4,593	4,789
Mar.–May	4,789	—	1.3	4,790	345.8	17.6	981	1,345	454	1,798	435.9	2,556	2,992
June–Aug.	2,992	—	1.5	2,993	347.9	1.7	704	1,053	419	1,473	371.1	1,150	1,521

[1] Uncommitted inventory. [2] Includes quantity under loan & farmer-owned reserve. [3] Preliminary. [4] Estimate.
Source: Economic Research Service, U.S.D.A. T.154

CORN

Corn Production Estimates and Cash Prices in the U.S.

Crop Year	Corn for Grain Production Estimates						St. Louis No. 2 Yellow	Gulf Ports No. 2 Yel. (Export)	Los Angeles No. 2 Yel.	Season Farm Avg. Price[1]	K.C. White No. 2	Value of Production (Million Dollars)
	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Final						
	In Thousands of Bushels						$ per bushel					
1982–3	8,315,088	8,318,678	8,314,938	8,329,808	8,397,334	8,235,101	2.87	3.06	3.93	2.55	3.35	22,039
1983–4	5,236,558	4,390,443	4,259,408	4,120,983	4,203,777	4,174,678	3.49	3.67	4.22	3.21	4.70	13,535
1984–5	7,667,721	7,551,991	7,497,831	7,527,206	7,649,995	7,674,020	2.81	3.00	3.78	2.63	3.27	20,085
1985–6	8,265,554	8,468,504	8,602,994	8,716,534	8,865,006	8,876,706	2.37	2.52	3.43	2.23	2.49	19,522
1986–7	8,316,156	8,268,141	8,220,201	8,222,576	8,252,834	8,249,864	1.68	1.83	2.69	1.50	2.17	12,541
1987–8	7,230,950	7,140,505	7,139,255	7,166,020	—	7,064,143	2.19	2.39	3.22	1.94	2.55	13,985
1988–9	4,479,385	4,462,475	4,552,735	4,671,235	—	4,921,191	2.72	2.93	3.56	2.54	3.54	12,499
1989–90	7,348,155	7,321,005	7,448,875	7,589,715	—	7,525,493	2.58	2.79		2.36		17,764
1990–1[2]	7,850,164	8,118,117	8,021,697	7,934,892	—	7,934,028	2.49	2.70		2.28		18,250
1991–2[2]	7,417,531	7,295,071	7,479,421	7,485,901								

[1] Includes an allowance for unredeemed loan & purchase agreement deliveries valued at the average loan rate. [2] Preliminary.

Source: Economics Research Service; Crop Reporting Board, U.S.D.A. T.153

Production of Corn (For Grain) in the United States, by States In Millions of Bushels

Year	Illinois	Indiana	Iowa	Kansas	Kentucky	Michigan	Minn.	Missouri	Nebraska	No. Car.	Ohio	Pa.	So. Dak.	Wisconsin	Texas
1982	1,499	790.0	1,578	139.1	154.5	293.2	734.5	199.0	748.0	155.4	456.0	126.1	193.7	361.8	119.7
1983	624.1	340.9	743.9	85.6	46.1	165.6	367.1	72.9	470.5	76.8	224.0	72.5	104.4	223.1	104.8
1984	1,247	705.5	1,445	119.4	146.0	220.1	689.1	154.4	806.2	145.8	460.2	148.5	186.3	344.5	144.2
1985	1,535	756.5	1,707	152.1	159.1	286.7	724.5	272.8	953.6	128.4	511.8	151.8	252.0	358.5	156.5
1986	1,404	695.4	1,627	181.6	139.8	257.3	707.6	280.7	896.0	93.8	476.2	127.7	233.7	365.8	149.0
1987	1,201	631.8	1,307	141.6	118.6	185.3	635.0	243.0	812.2	69.0	362.4	95.4	228.3	330.4	133.8
1988	700.8	415.0	898.8	143.8	80.3	112.0	347.8	153.5	818.4	81.5	255.0	59.2	132.0	130.7	129.6
1989	1,322	691.6	1,446	155.0	136.9	222.6	700.0	219.8	847.0	88.4	342.2	98.9	190.8	310.8	148.4
1990	1,321	703.1	1,562	188.5	120.0	238.1	762.6	205.8	934.4	72.8	417.5	109.6	234.0	354.0	130.5
1991[1]	1,221	531.1	1,381	200.0	112.5	253.0	737.5	196.8	1,003.3	85.5	319.5	66.5	237.3	362.7	176.0

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.157

Distribution of Corn in the United States In Millions of Bushels

Year Beg. Sept.	Wet-Milled Products					Dry-Milled Products			Total Shipments	Seed	Livestock Feed[3]	Exports (Incl. Grain Equiv. of Pdt's.)	Total Utilization	Domestic Disappearance
				Alcohol		Alcohol								
	HFCS	Glucose & Dextrose	Starch	Fuel	Beverage[2]	Fuel	Beverage	Alkaline Cooked Pdt's.						
1982–3	215	188	127	100	30	40	10	170	895	14.5	4,533	1,821	7,249	5,428
1983–4	256	189	147	120	30	40	10	164	975	19.1	3,831	1,886	6,693	4,806
1984–5	310	187	143	140	30	90	10	160	1,091	21.2	4,091	1,850	7,032	5,182
1985–6	328	188	152	155	30	115	10	161	1,160	19.5	4,153	1,182	6,494	5,312
1986–7	339	185	155	200		125	10	161	1,191	16.7	4,701	1,492	7,385	5,893
1987–8	359	187	167	200		136		163	1,229	17.2	4,812	1,716	7,757	6,041
1988–9	362	196	164	210		139		161	1,251	18.7	3,981	2,028	7,260	5,232
1989–90	369	207	172	222		140		161	1,290	19.0	4,455	2,369	8,113	5,745
1990–1[1]	380	215	180	230		140		161	1,325	19.0	4,709	1,727	7,761	6,034
1991–2[4]	389	222	185	230		140		164	1,350	20.0	4,800	1,575	7,725	6,150

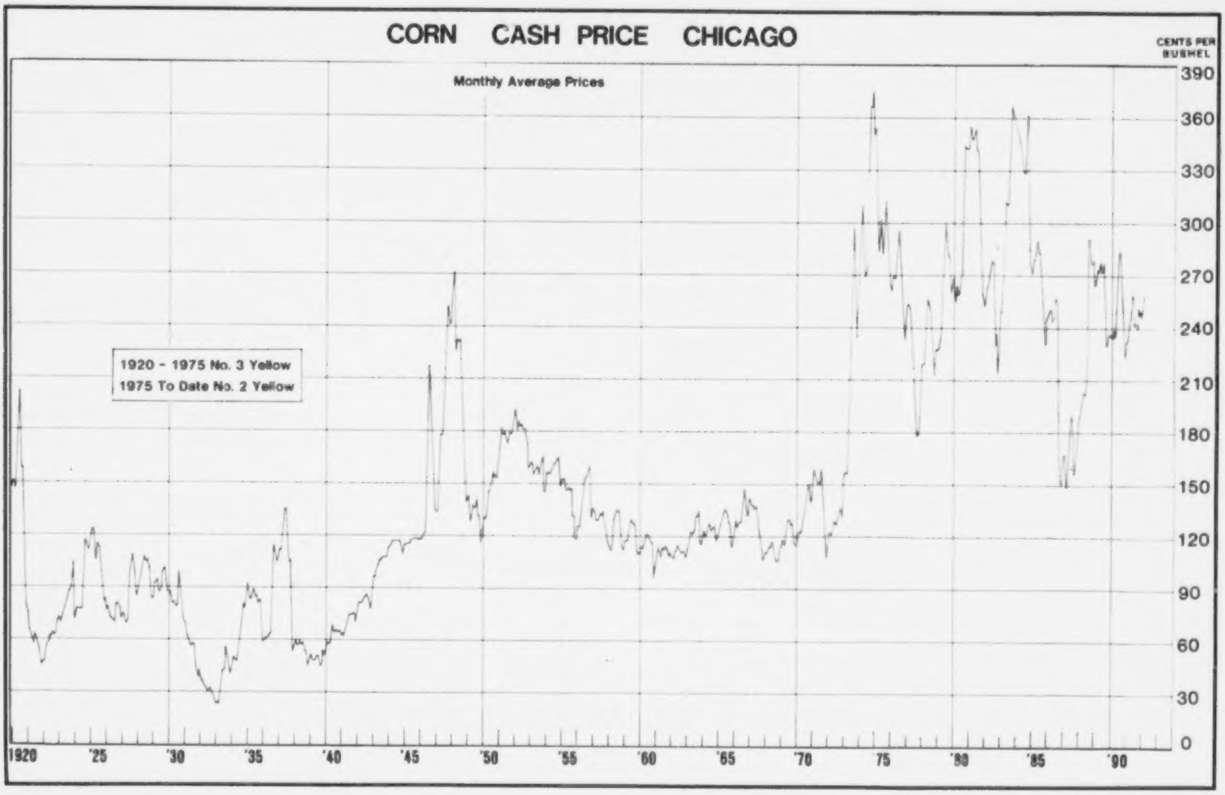
[1] Preliminary. [2] Also includes nonfuel industrial alcohol. [3] Feed & waste (residual, mostly feed). [4] Forecast.

Source: Economics Research Service, U.S.D.A. T.155

U.S. Exports[1] of Corn (Including Seed), By Country of Destination In Thousands of Metric Tons

Yr. Begin. Sept.	Algeria	Brazil	Bulgaria	China	Egypt	German Dr	Israel	Japan	Mexico	Rep. of Korea	Saudi Arabia	Spain	Taiwan	USSR	Total Exports
1984–5	500	209	69	0	1,352	468	264	11,095	1,267	1,602	307	2,353	3,134	15,750	45,960
1985–6	311	1,062	370	0	1,390	320	270	8,535	1,446	1,223	206	1,759	2,591	6,808	29,388
1986–7	971	1,162	279	1,088	2,247	542	408	12,414	3,028	3,915	307	411	3,176	4,102	39,062
1987–8	1,029	0	756	279	822	447	418	15,830	2,772	4,664	611	1,627	4,004	5,184	43,846
1988–9	1,001	20	1,180	0	1,240	617	282	13,893	2,804	4,695	598	1,553	4,002	16,674	52,577
1989–90	1,229	0	23	410	1,151	952	321	14,342	4,641	5,863	773	1,558	5,024	16,486	58,558
1990–1	1,202	400	0	0	1,339	0	271	13,617	1,838	2,118	659	1,339	5,066	8,433	42,610

[1] Exports of grain only. Does not include corn exported under the food for relief or charity program. *Source: U.S. Bureau of Census.* T.165



Average Cash Price of Corn, No. 2 Yellow in Central Illinois[2] In Cents Per Bushel

Crop Yr	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average[1]
1982–3	217	207	238	244	254	274	298	312	311	328	333	360	298
1983–4	352	347	351	338	330	329	352	361	361	362	345	323	346
1984–5	295	281	279	272	279	279	284	290	285	283	276	250	279
1985[2]	2.28	2.10	2.32	2.38	2.36	2.33	2.29	2.31	2.42	2.41	1.93	1.52	2.22
1986	1.34	1.34	1.55	1.52	1.44	1.38	1.46	1.56	1.75	1.74	1.60	1.46	1.51
1987	1.50	1.64	1.74	1.78	1.84	1.90	1.92	1.92	1.97	2.66	2.85	2.70	2.04
1988	2.68	2.70	2.54	2.56	2.62	2.60	2.64	2.58	2.64	2.53	2.44	2.30	2.57
1989	2.35	2.25	2.29	2.29	2.29	2.34	2.44	2.64	2.73	2.70	2.68	2.54	2.46
1990	2.25	2.18	2.20	2.27	2.31	2.36	2.45	2.50	2.41	2.34	2.34	2.45	2.33
1990–1[1]	2.41	2.40											

[1] Preliminary. [2] Data prior to 1985–6 are for Chicago (15 days). *Source: Economic Research Service, U.S.D.A.* T.161

Average Cash Price of Corn, No. 2 Yellow at Gulf Ports[2] In Dollars Per Bushel

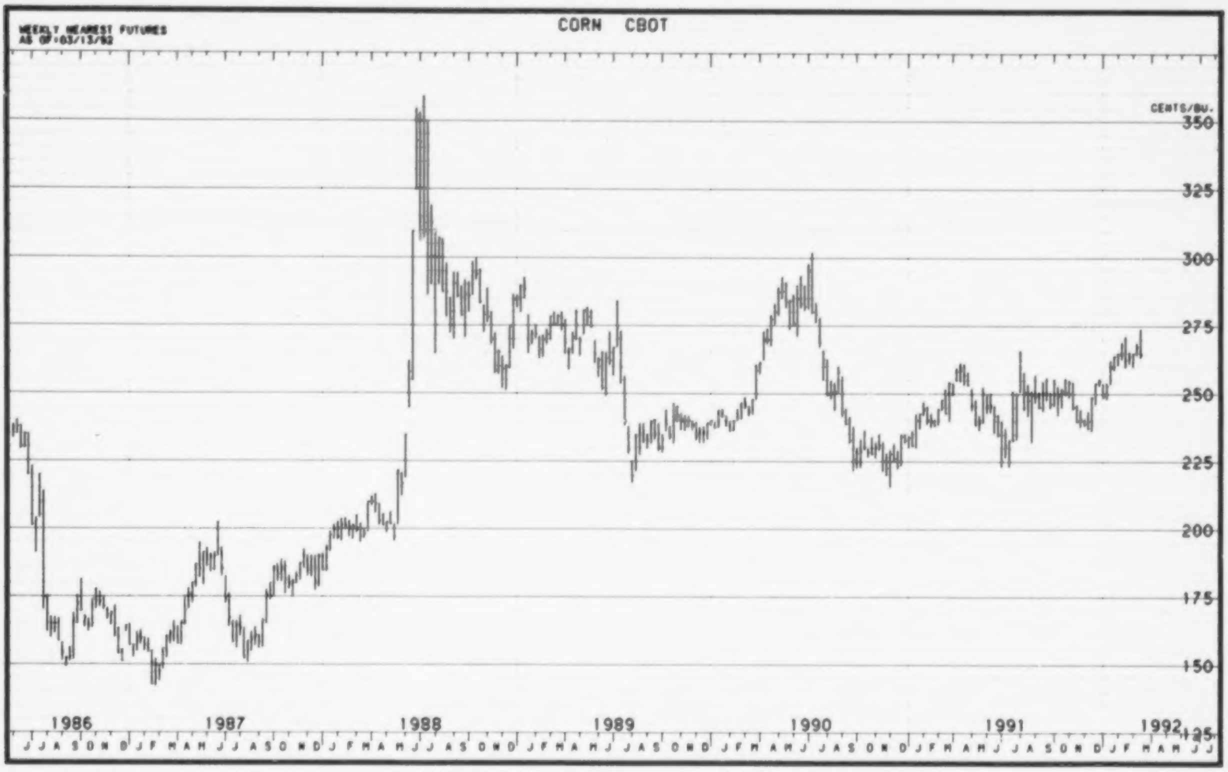
Crop Yr	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
1982–83	2.23	2.12	2.35	2.37	2.42	2.62	2.82	3.09	3.10	3.11	3.18	3.39	2.73
1983–84	3.32	3.23	3.24	3.17	3.11	3.03	3.25	3.33	3.35	3.37	3.22	3.11	3.23
1984–85	2.94	2.71	2.61	2.55	2.60	2.61	2.68	2.73	2.68	2.70	2.61	2.39	2.65
1985[2]	2.59	2.50	2.69	2.75	2.72	2.63	2.56	2.57	2.68	2.63	2.12	1.85	2.52
1986	1.68	1.66	1.83	1.81	1.73	1.70	1.83	1.89	2.06	2.06	1.95	1.81	1.83
1987	1.86	1.99	2.08	2.11	2.20	2.23	2.29	2.28	2.29	3.05	3.22	3.02	2.39
1988	3.08	3.07	2.89	2.99	3.01	2.99	3.02	2.93	2.99	2.87	2.73	2.57	2.93
1989	2.62	2.99	2.75	2.76	2.69	2.70	2.72	3.01	3.08	3.05	2.92	2.79	2.84
1990	2.59	2.55	2.54	2.60	2.68	2.70	2.77	2.80	2.69	3.05	2.67	2.79	2.70
1990–91[1]	2.76	2.76											

[1] Preliminary. [2] Data prior to 1985–6 are for Omaha. *Source: Economic Research Service, U.S.D.A.* T.161a

Weekly Outstanding Export Sales & Cumulative Exports—U.S. Corn In Thousand Metric Tons

Marketing Year 1989/90 Week Ending	1989/90		Marketing Year 1990/91 Week Ending	1990/91		Marketing Year 1991/92 Week Ending	1991/92	
	Outst. Sales	Cumul. Exports		Outst. Sales	Cumul. Exports		Outst. Sales	Cumul. Exports
Sept. 7,'89	6,760	592	Sept. 6, 1990	8,495	342	Sept. 5	6,869	445
14	6,595	1,128	13	8,501	981	12	7,476	966
21	7,187	1,786	20	8,349	1,616	19	7,069	1,945
28	8,004	2,489	27	8,196	2,287	26	7,734	2,616
Oct. 5	10,863	3,339	Oct. 4	7,813	2,965	Oct. 3	7,858	3,574
12	11,960	3,993	11	8,002	3,572	10	7,884	4,403
19	15,215	4,956	18	8,520	4,018	17	7,650	5,151
26	16,223	5,797	25	8,205	4,778	24	7,584	5,959
Nov. 2	15,469	7,273	Nov. 1	8,093	5,359	31	7,080	6,877
9	15,165	8,697	8	7,870	6,312	Nov. 7	6,535	7,889
16	14,916	10,113	15	7,576	7,339	14	6,478	8,501
23	13,846	11,941	22	7,459	8,333	21	6,270	9,148
30	14,955	14,335	29	7,434	9,440	28	5,847	9,900
Dec. 7	14,731	15,796	Dec. 6	7,207	10,649	Dec. 5	6,804	10,486
14	13,715	17,724	13	6,847	11,638	12	6,329	11,148
21	13,045	19,079	20	7,251	12,425	19	6,990	11,800
28	12,745	19,906	27	6,778	13,039	26	6,468	12,502
Jan. 4,'90	11,973	21,216	Jan. 3, 1991	6,451	13,650	Jan. 2, '92	5,972	13,171
11	11,214	22,773	10	10,081	14,745	9	6,374	13,741
18	10,810	24,317	17	9,870	15,830			
25	10,902	25,710	24	10,376	16,377			
Feb. 1	10,546	27,174	31	10,313	17,291			
8	10,572	28,186	Feb. 7	10,076	18,325			
15	10,581	29,407	14	9,744	19,406			
22	10,020	30,610	21	9,143	20,665			
Mar. 1	10,125	31,672	28	8,898	21,755			
8	10,069	32,800	Mar. 7	8,321	23,057			
15	9,892	33,760	14	7,805	23,657			
22	9,706	34,794	21	7,397	24,674			
29	9,758	35,903	28	7,065	25,667			
Apr. 5	9,634	37,160	Apr. 4	6,520	26,860			
12	10,476	38,377	11	6,035	27,869			
19	10,259	39,555	18	5,714	28,629			
26	9,966	40,943	25	6,059	29,340			
May 3	9,823	41,866	May					
10	11,489	42,648						
17	11,676	43,863						
24	10,636	45,220						
31	10,064	46,386	June					
June 7	9,101	47,842						
14	8,120	49,316						
21	7,520	50,303						
28	6,793	51,349	July					
July 5	6,350	52,135						
12	6,335	52,874	18	6,179	37,603			
19	5,316	53,922	25	5,431	38,554			
26	4,754	54,565	Aug. 1	4,806	39,474			
Aug. 2	4,385	55,239	8	4,289	40,334			
9	3,556	55,902	15	3,549	41,254			
16	3,044	56,869	22	2,801	41,920			
23	2,485	57,635	29	2,201	42,610			
30	1,457	58,635						

Source: U.S.D.A. Export Sales Report (U.S.D.A.) T.161b



High, Low & Closing Prices of May Corn Futures at Chicago In Cents per Bushel

Year of Delivery		Year Prior to Delivery Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Delivery Year Jan.	Feb.	Mar.	Apr.	May	Life of Delivery Range
1988	High	187	199	221	225½	202¼	188½	195¾	203	204¼	202	208	210¼	212	213	219	225½
	Low	175½	182½	195¼	198½	184¼	177½	180	189	185¼	189½	190¼	201	202	198½	195½	174
	Close	184¾	197½	203	202¾	188¾	181¾	193¼	190	202	191¼	202½	209¼	209¾	202¼	216	—
1989	High	235	240½	259	366	369	319¾	312½	303¼	294¾	291¾	298	281¾	284½	280¾	281¾	369
	Low	223½	235¼	234¾	253	281	285	290	279¼	267½	268½	270	269	264½	258½	271½	207½
	Close	232¼	238½	258½	345¼	291¼	302¼	293¼	288½	274½	289¾	281½	278½	268½	269¼	274¾	—
1990	High	286	283	273½	268¾	285¼	253½	252¾	257	249½	247¼	250¾	254½	261¾	283	293	293
	Low	262	260	245½	243½	230	231	239	241½	241¼	239½	241¾	241¼	248	262¼	278½	230
	Close	267	267¾	246	261¾	232¼	249½	247	245¾	244½	245½	243¾	253¼	261¼	281¼	280	—
1991	High	267	282¾	290½	300	306½	268¾	252¾	250¾	252	248½	255¼	253¾	259¾	261¼	247¾	
	Low	258½	265½	273½	272	261½	248¼	237½	237¾	235	239¼	236	245½	246¾	246¼	236½	
	Close	262½	279¼	277¾	298½	269	249¼	243¼	245½	245¼	239½	252½	251	252¾	246½	241¼	

Source: Chicago Board of Trade T.162

Corn (Shelled & Ear) Stocks in the United States In Millions of Bushels

Year	On Farms Mar. 1	June 1	Sept. 1	Dec. 1	Off Farms Mar. 1	June 1	Sept. 1	Dec. 1	Total Stocks Mar. 1	June 1	Sept. 1	Dec. 1
1985	N.A.	2,008	N.A.	N.A.	N.A.	828	N.A.	N.A.	N.A.	2,836	1,648	8,615
1986	N.A.	3,143	2,049	6,796	N.A.	1,847	1,990	3,510	6,587	4,990	4,040	10,305
1987	5,024	3,492	2,285	6,100	3,224	2,840	2,597	3,668	8,248	6,332	4,882	9,768
1988	4,421	3,241	2,003	4,280	3,215	2,598	2,256	2,791	7,636	5,839	4,259	7,072
1989	3,021	2,022	967.5	4,699	2,183	1,397	962.9	2,383	5,204	3,419	1,930	7,082
1990[1]	2,911	1,624	754.8	4,874	1,902	1,220	589.7	2,066	4,812	2,843	1,344	6,940
1991[1]	3,065	1,755	691.2		1,724	1,237	829.7		4,789	2,992	1,521	

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.156

CORN

Volume of Trading of Corn Futures at Chicago In Millions of Bushels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	2,802	3,390	3,634	3,355	2,754	3,538	3,122	3,552	3,127	3,239	4,634	2,594	39,741
1983	3,638	3,114	5,355	4,440	3,943	4,511	5,627	7,431	5,882	5,180	5,734	3,518	59,623
1984	3,518	3,866	4,248	4,407	4,259	4,111	4,868	3,975	3,289	2,883	3,619	2,439	45,543
1985	2,406	2,369	2,746	2,608	2,346	2,494	3,231	2,743	2,629	2,597	3,545	2,248	31,964
1986	2,629	2,153	2,203	2,840	3,029	2,390	2,605	2,217	2,486	3,103	2,591	2,555	30,801
1987	2,343	2,901	3,088	3,646	3,579	3,984	2,978	2,498	2,620	3,380	2,923	2,327	36,266
1988	3,040	3,333	3,212	3,478	4,235	7,898	6,818	5,352	4,353	4,661	5,597	3,549	55,528
1989	4,170	3,384	3,818	4,138	3,930	4,485	4,323	3,433	2,827	4,702	4,352	2,793	46,354
1990[1]	3,248	3,991	4,623	5,742	7,146	6,767	5,509	4,541	3,028	3,939	5,682	2,899	57,114
1991[1]	4,284	3,484											

[1] Preliminary. *Source: Chicago Board of Trade*

T.164

Average Open Interest of Corn Futures at Chicago In Millions of Bushels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
'82	672,910	705,913	620,190	643,218	582,807	563,480	560,699	600,022	589,747	635,224	691,162	657,055
'83	716,424	800,532	817,023	866,363	805,530	754,156	727,343	994,808	1,131,512	1,147,910	1,167,236	1,075,548
'84	1,037,167	995,724	997,533	1,003,501	807,738	759,022	681,895	723,519	698,227	737,381	715,814	629,253
'85	667,033	655,735	592,298	630,084	525,072	513,082	549,368	627,919	639,756	637,095	716,065	656,807
'86	603,350	562,749	545,073	572,669	548,970	586,031	574,077	607,718	621,703	712,114	773,156	590,845
'87	651,105	708,597	692,102	706,486	650,705	632,792	568,933	591,430	593,557	689,305	690,809	631,781
'88	728,517	759,008	787,238	813,253	826,970	1,072,313	1,229,357	1,174,962	1,164,763	1,236,846	1,211,708	1,112,098
'89	1,081,102	994,058	963,200	917,720	819,439	783,908	719,030	727,027	706,896	857,567	971,254	839,719
'90	890,470	1,014,224	1,149,729	1,260,776	1,250,101	1,212,310	1,063,743	1,039,755	1,033,015	1,056,112	1,151,665	1,019,404
'91	1,050,031	1,096,179										

Source: Chicago Board of Trade

T.163

Corn Price Support Data in the United States

Year Begin. Oct.1	National Avg. Loan Rate	Grain Reserve Loan Rate	Target Price	Placed Under Loan	% of Production	Acquired by CCC	Total Deliveries[2]	Quantity Pledged ths. bu.	Face Amount ths. $	Owned by CCC 9/30	Total Stocks (as of 8/31)	CCC Inventory — As of Dec. 31 — CCC Owned	CCC Inventory — As of Dec. 31 — Under CCC Loan
	¢ Bush.			Millions of Bushels									
1982–3	255	290	270	1,579	18.9	349	0	15,485	45,889	1,150	3,523	429	2,400
1983–4	265		286	162	3.9	9		369	1,058	201	1,006	1,230	1,450
1984–5	255		303	1,100	14.3	65		2,290	6,270	240	1,648	296	1,056
1985–6	255		303	3,171	35.7	580		56,868	156,478	546	4,040	477	2,811
1986–7	192		303	4,894	59.3	1,332		59,188	114,611	1,443	4,882	1,265	4,905
1987–8	182		303	4,186	59.2	787		290,323	563,745	835	4,259	1,843	4,436
1988–9[1]	177		293	760	15.4	150		18,757	35,688	363	1,930	679	982
1989–90[1]	165		284							233	1,345		
1990–1[4]	157		275							400	1,260		

[1] Preliminary. [2] Includes "delivered to CCC" from original program and deliveries from reseal program and over-deliveries as determined by weight of farm-stored grain when delivered to CCC. [3] Less than 500,000 bushels. [4] Projected.
Source: Agricultural Stabilization and Conservation Service, U.S.D.A.

T.159

Corn Under Price Support through the End of the Month (Cumulative Total from Current Season's Crop) In Millions of Bushels

Crop Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1982–3		15.5	76.2	334.5	870.2	1,369	1,505	1,551	1,561	1,567	1,572			
1983–4		.4	14.6	58.1	98.3	138.0	149.1	158.3	160.2	161.1	161.3			
1984–5		2.3	47.2	278.5	631.5	969.6	1,028	1,055	1,063	1,068	1,070			
1985–6	11.1	56.9	369.8	1,069	2,016	2,055	2,828	2,916	2,996	3,278	3,040			
1986–7	8.1	59.2	535.6	1,583	2,810	3,922	4,455	4,612	4,765	4,814	4,839	4,850		
1987–8	3.8	290.3	967.9	2,385	3,051	3,899	4,092	4,140	4,168	4,181	4,187	4,187		
1988–9	1.3	16.0	95.3	266.2	505.7	704.7	733.4	749.3	752.9	754.0	756.0	755.9		
1989–90	2.3	11.3	75.9	434.0	668.0	870.9	896.4	916.4	918.6	919.5	919.9	919.9		
1990–1	1.4	6.9	56.7	431.0										

Source: U.S. Department of Agriculture

T.158

Corn Oil

Supply & Disappearance of Corn Oil In Millions of Pounds

	Supply				Disappearance									
					Food Uses					Non-Food Uses				
Year Beginning Oct.	Production	Imports	Stocks Oct. 1	Total Supply	Shortening	Margarine	Salad & Cooking Oil	Other	Total Food Uses	Foots & Loss	Other	Total Non-Food Uses	Total Domestic Disappearance	Total Exports & Shipments
1982–3	981	—	55	1,036		217	395		637				723	223
1983–4	1,054	—	90	1,144		196	458		693				762	311
1984–5	1,195	—	70	1,265		206	511		774				930	260
1985–6	1,253	—	75	1,328		200	524		837				863	344
1986–7	1,400	—	121	1,520	N.A.	248	491		934				1,143	268
1987–8	1,435	—	109	1,544	N.A.	212	555		946				1,065	370
1988–9	1,415	2	111	1,528	227	218	615		1,060				1,073	356
1989–90[1]	1,459	—	99	1,558	255	218	659		1,129				1,017	414
1990–1[1]	1,675	1	127	1,803	261	158	456		875				1,175	475
1991–2[2]	1,725		153	1,880									1,225	525

[1] Preliminary. [2] Forecast. *Source: Economic Research Service, U.S.D.A.* T.166

Crude Corn Oil Production in the United States[2] In Millions of Pounds

Crop Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1982–3	79.2	72.6	78.4	78.9	73.1	88.2	79.8	85.9	83.6	82.7	92.0	88.2	982.6
1983–4	87.0	85.7	83.2	92.1	87.5	91.1	88.5	94.5	84.4	90.6	86.4	82.0	1,053
1984–5	88.8	75.5	89.6	87.7	84.2	107.3	107.0	110.1	107.7	130.1	101.9	104.0	1,194
1985–6	114.2	101.5	97.1	72.8	97.9	102.2	109.8	118.4	106.3	108.6	119.9	104.1	1,253
1986–7	134.6	120.2	114.0	100.1	102.2	119.3	111.2	123.8	117.5	123.0	114.7	119.5	1,400
1987–8	121.5	115.9	110.6	107.1	110.2	113.4	117.3	125.6	125.4	131.7	132.1	124.5	1,435
1988–9	123.8	107.5	127.8	125.5	108.6	128.9	122.0	125.1	119.9	118.6	98.7	108.5	1,415
1989–90[1]	130.2	106.1	128.6	127.7	122.0	131.4	135.6	115.5	140.7	150.4	145.2	132.2	1,566
1990–1[1]	142.0	129.4	129.3	——	310.0	——	——	319.2	——				

[1] Preliminary. [2] Not seasonally adjusted. *Source: Economic Research Service, U.S.D.A.* T.167

U.S. Corn Oil Consumption in Refining In Millions of Pounds

Crop Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1983–4	82.4	82.4	81.6	72.6	64.2	91.8	75.1	85.9	74.6	85.1	93.0	86.5	1,053
1984–5	82.1	86.7	91.0	84.0	71.3	89.4	75.5	106.0	97.4	109.1	96.2	90.8	1,080
1985–6	106.0	95.8	87.1	94.1	87.8	100.9	95.1	103.4	91.2	105.2	97.4	98.1	1,162
1986–7	101.2	98.9	98.3	95.7	98.4	104.0	88.7	83.1	90.9	82.6	77.1	92.3	1,111
1987–8	99.2	90.5	78.3	77.7	93.4	90.0	91.7	103.6	104.1	100.6	119.0	110.6	1,159
1988–9	100.8	101.2	107.9	116.5	98.6	118.0	89.5	110.1	106.2	100.1	107.5	98.0	1,254
1989–90	119.8	99.2	105.2	109.1	94.3	96.9	99.8	102.2	105.6	118.3	107.6	102.2	1,260
1990–1[1]	115.4	100.0	108.2	——	330.2	——	——	335.1	——				

[1] Preliminary. *Source: Bureau of the Census* T.167A

Corn Oil Spot Price, Crude, Wet Mill at Chicago In Cents Per Pound

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
1981–2	20.0	21.0	25.0	24.0	29.0	25.0	25.0	24.0	23.5	23.0	20.5	21.0	23.4
1982–3	23.0	23.8	24.0	22.5	24.5	21.5	21.0	22.5	22.0	20.0	25.0	36.0	23.8
1983–4	27.5	28.0	25.8	27.0	25.3	26.5	30.0	38.8	35.7	26.0	23.8	29.0	26.6
1984–5	30.5	34.2	30.7	28.7	30.0	31.0	32.5	31.5	30.8	N.A.	N.A.	N.A.	31.1
1985–6	20.9[2]	20.2	20.1	20.8	18.7	17.1	17.9	18.0	17.3	17.0	16.7	16.7	17.0
1986–7	19.60	20.47	21.48	22.45	24.61	22.65	20.94	21.43	22.90	21.48	20.00	19.14	21.4
1987–8	20.68	20.69	21.49	23.09	22.46	21.26	20.44	21.61	26.43	29.56	26.58	24.94	23.27
1988–9	23.35	21.78	21.22	20.65	20.30	21.61	21.40	21.75	21.44	20.05	19.21	19.39	21.01
1989–90	20.84	22.67	23.00	22.61	23.57	24.96	26.05	24.99	26.56	25.09	28.49	28.00	24.74
1990–1[1]	26.61	24.24	22.15	25.89	27.29	29.50	28.98	28.87	29.61	29.76	29.55	28.50	27.57
1991–2													

[1] Preliminary. [2] Prior to Oct. 1985 prices are for F.O.B. Decatur (tank cars). *Source: Economic Research Service, U.S.D.A.* T.168

Cotton

World cotton production in 1991/92 was forecast by USDA to rise 4 percent to over 90 million bales. The U.S. crop was considerably larger, and there were increases in China, Pakistan, India and Brazil. China's crop was pegged at 22 million bales, a 6 percent gain, while Pakistan's outturn was estimated at 8 million bales, an almost 7 percent increase. India's output of 9.5 million bales was up about 4 percent, while Brazil's rose nearly 10 percent. The Soviet harvest, however, declined by 8 percent to 11 million bales. Soviet cotton production has been trending lower since 1985.

World mill consumption in 1991/92 was pegged at 86.5 million bales, against 85.4 million a year before. China's textile mills were expected to consume 20 million bales, the same as the previous season. The former USSR's mill use was forecast at 8.5 million bales, against 8.7 million the year before. Pakistan's mill use was slated to rise by 10 percent to 6.3 million bales. Japanese textile mills were expected to reduce their usage to 2.9 million bales from just over 3 million in 1990/91.

World exports were projected to be over 23 million bales, virtually unchanged. U.S. exports were expected to decline, while foreign shipments were to expand by over 4 percent. Exports by Pakistan were put at 1.6 million bales, up from 1.4 million the previous season. Shipments by the cotton republics of Uzbekistan, Turkmenistan and Tadzhikistan, now independent nations, were projected to be 3 million bales, against 2 million the year before. Soviet shipments, which in past years went to Eastern European countries, now will likely be directed to nations that pay hard currency. This may create opportunities for U.S. exports in Eastern Europe, but will mean more competition in Western Europe and Japan.

The world's major importers included Japan, South Korea, China, and Italy.

With the increase in cotton production, projected world ending stocks in 1991/92 were expected to rise by 14 percent to nearly 32 million bales.

The U.S. cotton crop in 1991 was 17.5 million bales, versus 15.5 million the previous season and the largest in several decades. Planted area was 14.1 million acres, up 15 percent. Part of the increase was due to an acreage reduction requirement of 5 percent, versus 12.5 percent the year before. Harvested area was 12.8 million acres, up from 11.7 million in 1990. National average yield was 656 pounds per acre, 3 percent above the season before and one of the highest on record. Planting was delayed by heavy rains; however, the weather improved later. Weather and yields were particularly good in Mississippi, Alabama, Georgia and South Carolina. Conditions were poorer in Texas, where insect infestations damaged the crop. In California, irrigation water was low because of the extended drought.

Domestic mill use of cotton was to reach a record 9.1 million bales, up 5 percent, because of continued consumer preferences for cotton clothing and home textiles. Denim remained very popular.

U.S. cotton exports were put at 6.8 million bales, down 13 percent. Competition with exporters like Pakistan and the Soviet republics was keen. China, a major U.S. cotton customer, was expected to import less. The chief markets for U.S. cotton were Japan, China, South Korea, Indonesia and Italy.

With the large crop, U.S. ending stocks of the natural fiber in 1991/92 were slated to rise to 4.1 million bales from only 2.3 million the year before.

U.S. Government Program

The acreage reduction requirement was 5 percent for the 1991 crop and 10 percent for 1992. The target price was 72.9 cents a pound in 1991 and 1992; the loan rate was 50.77 cents in 1991 and 52.35 cents in 1992. The marketing loan remained in effect.

Futures Market

Cotton futures and options are traded on the New York Cotton Exchange.

Supply and Distribution of All Cotton in the United States In Thousands of (480-Lb. Net Weight) Bales

Crop Year Beginning Aug. 1	Area			Supply				Disappearance							Value of Production
	Planted	Harvested	Yield	Beginning stocks[1]	Production[2]	Imports	Total	Mill use	Exports	Total	Unaccounted	Ending stocks	Farm price[3]	World "A" Index Price[6]	
	-1,000 acres-		Lbs./ acre	1,000 480-lb. bales									cents per lb.		Million $
1983	7,926	7,348	508	7,937	7,771	12	15,721	5,928	6,786	12,714	-232	2,775	66.4	87.61	2,448
1984	11,145	10,379	600	2,775	12,982	24	15,781	5,540	6,215	11,755	76	4,102	57.8	69.18	3,671
1985	10,685	10,229	630	4,102	13,432	33	17,567	6,399	1,960	8,359	140	9,348	56.3	48.90	3,628
1986	10,045	8,468	552	9,348	9,731	3	19,082	7,452	6,684	14,136	80	5,026	52.4	61.98	2,449
1987	10,397	10,030	706	5,026	14,760	2	19,788	7,617	6,582	14,199	182	5,771	64.3	72.65	4,555
1988	12,515	11,948	619	5,771	15,412	5	21,187	7,782	6,148	13,930	-165	7,092	56.6	66.42	4,102
1989	10,587	9,538	614	7,092	12,196	2	19,290	8,759	7,694	16,453	163	3,000	65.6	82.34	
1990[4]	12,348	11,732	634	3,000	15,499	4	18,503	8,657	7,793	16,450	291	2,344	68.1		
1991[5]	14,101	13,479	649	2,344	18,251	10	20,569	9,100	7,200	16,300	131	4,400			

[1] Excludes preseason ginnings. [2] Includes preseason ginnings. [3] Includes allowance for unredeemed loans. [4] Preliminary. [5] Projected [6] Average of 5 cheapest types of SLM 1 3/32" staple length cotton offered on the European market. *Source: Economic Research Service U.S.D.A.*

Cotton World Supply and Demand In Thousands of 480-lb. Bales

Yr. Begin. Aug. 1	Beginning Stocks				Production				Consumption				Exports			
	US	USSR	PR China	World Total	US	USSR	PR China	World Total	US	USSR	PR China	World Total	US	USSR	PR China	World Total
1978–9	5,347	2,465	2,500	26,158	10,856	11,907	9,950	59,639	6,352	9,075	13,100	63,286	6,180	3,756	15	19,790
1979–0	3,958	1,895	1,460	21,735	14,629	12,833	10,100	65,736	6,506	9,100	14,100	66,155	9,229	3,770	12	23,244
1980–1	3,000	2,154	1,548	21,177	11,122	13,498	12,400	64,996	5,891	9,150	15,100	65,969	5,926	4,070	6	19,713
1981–2	2,668	2,585	2,392	20,455	15,646	13,277	13,600	71,195	5,264	9,150	16,200	66,131	6,567	4,295	0	20,239
1982–3	6,632	2,527	1,892	25,181	11,963	11,939	16,500	68,080	5,513	9,200	16,400	68,249	5,207	3,890	75	19,452
1983–4	7,937	1,900	3,101	25,198	7,771	9,976	21,300	65,557	5,928	8,750	16,000	68,307	6,786	3,202	760	19,166
1984–5	2,775	707	8,305	23,952	12,982	11,928	28,701	88,960	5,540	9,000	16,000	70,155	6,215	2,994	944	20,206
1985–6	4,102	1,460	20,146	43,246	13,432	12,777	19,000	80,759	6,399	9,400	19,500	77,314	1,960	3,170	2,799	20,299
1986–7	9,348	2,260	16,848	47,026	9,731	12,217	16,300	70,661	7,452	9,350	20,200	82,776	6,684	3,462	3,169	26,014
1987–8	5,026	2,031	10,795	35,926	14,760	11,345	19,500	81,012	7,617	9,000	20,500	84,095	6,582	3,457	2,322	23,227
1988–9	5,771	1,302	7,559	32,850	15,411	12,686	19,100	84,646	7,782	8,900	20,500	85,233	6,148	3,656	1,636	25,869
1989–0	7,092	2,045	5,971	32,092	12,196	12,337	17,400	80,019	8,759	9,200	20,000	86,647	7,694	3,330	865	23,978
1990–1[1]	3,000	2,032	4,379	26,374	15,499	12,000	20,700	86,958	8,715	8,700	20,000	85,548	7,793	2,000	928	23,380
1991–2[2]	2,344	3,593	6,356	27,884	18,215	11,000	22,000	91,587	9,100	8,500	20,500	87,696	7,200	3,300	1,000	23,891
1992–3[2]	4,400	3,093	8,456	31,426												

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.168a

World Production of Cotton (All Types) In Thousands of 480-Lb. Bales

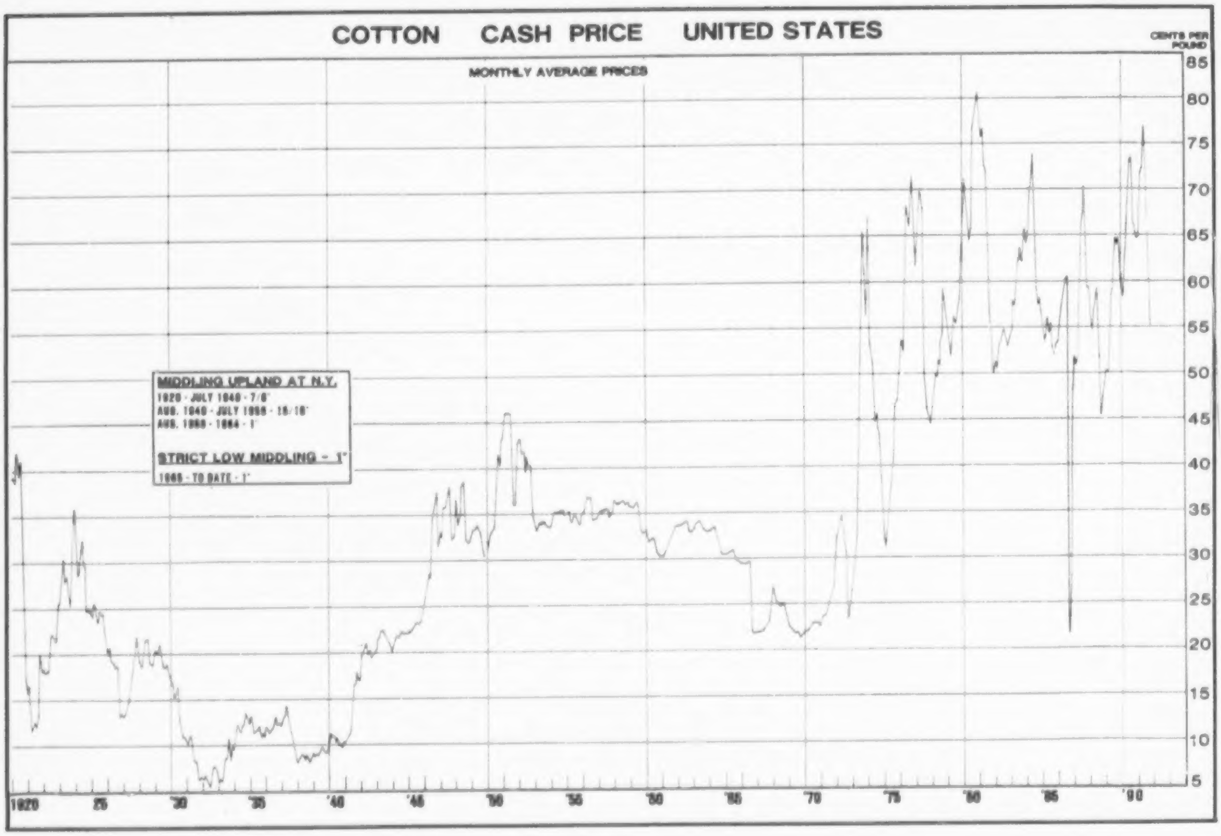
Year Begin. Aug. 1	Argentina	Brazil	PR China	Egypt	India	Iran	Mexico	Pakistan	Israel	Sudan	Colombia	Turkey	United States	USSR	World Total
1977–8	1,011	2,237	9,411	1,832	5,548	817	1,620	2,643	294	911	639	2,639	14,389	12,154	63,515
1978–9	797	2,623	9,958	2,014	6,191	612	1,563	2,176	363	637	371	2,191	10,856	11,694	59,446
1979–0	667	2,650	10,137	2,221	6,260	455	1,509	3,344	346	523	574	2,191	14,629	12,070	64,642
1980–1	384	2,862	12,429	2,428	6,256	262	1,620	3,281	359	446	527	2,297	11,122	12,224	63,741
1981–2	696	2,941	13,632	2,293	6,559	356	1,440	3,435	423	712	404	2,242	15,641	11,267	68,892
1982–3	515	2,976	16,526	2,115	6,755	431	840	3,783	400	944	151	2,246	11,963	10,380	66,472
1983–4	826	3,423	21,298	1,838	6,122	420	1,038	2,271	427	1,021	352	2,398	7,771	9,976	66,460
1984–5	787	4,431	28,720	1,833	8,360	512	1,110	4,630	402	933	575	2,664	12,982	11,928	88,364
1985–6	551	3,644	19,046	1,999	9,021	485	1,010	5,586	455	651	520	2,379	13,432	12,778	79,863
1986–7	459	2,909	16,261	1,850	7,254	510	638	6,059	308	748	490	2,376	9,731	12,217	70,107
1987–8	1,295	3,968	19,500	1,615	7,140	489	1,025	6,741	269	622	614	2,465	14,760	11,345	81,140
1988–9	894	3,257	19,056	1,426	8,276	535	1,417	6,547	288	637	554	2,986	15,412	12,704	84,288
1989–90	1,259	3,058	17,398	1,324	10,599	521	769	6,679	217	584	481	2,834	12,196	12,227	79,892
1990–1	1,332	3,456	20,714	1,359	8,279	632	806	7,513	236	379	561	3,031	15,499	12,100	86,935
1991–2[2]	1,335	3,657	22,700	1,268	10,425	669	1,025	7,655	102	303	698	2,711	16,200	11,700	91,593

[1] Preliminary. [2] Estimate. *Source: International Cotton Advisory Committee* T.169

World Consumption[3] of All Cottons in Specified Countries In Thousands of 480-Lb. Bales

Yr. Beg. Aug. 1	Argentina	Brazil	PR China	Egypt	Poland	France	W. Germany	India	Italy	Japan	Mexico	Pakistan	Un. Kingdom	United States	USSR	World Total
1977–8	478	2,241	12,050	1,295	697	846	807	5,288	837	2,988	737	1,872	413	6,509	8,550	60,435
1978–9	503	2,440	13,228	1,319	727	822	777	5,715	975	3,371	757	1,975	447	6,352	8,530	63,210
1979–0	468	2,589	13,972	1,295	782	846	789	5,944	1,047	3,408	757	1,898	400	6,506	8,510	65,116
1980–1	382	2,601	15,024	1,477	735	747	792	6,258	958	3,286	759	2,119	220	5,891	8,250	65,281
1981–2	359	2,631	16,285	1,341	606	743	795	5,837	1,028	3,383	708	2,334	207	5,264	7,855	64,666
1982–3	468	2,603	16,822	1,233	610	765	928	6,283	1,052	3,291	630	2,426	207	5,513	7,600	66,412
1983–4	515	2,553	15,714	1,274	619	745	989	6,580	1,140	3,277	528	2,311	207	5,926	7,900	67,353
1984–5	464	2,753	16,002	1,365	621	728	1,000	7,118	1,212	3,181	556	2,503	201	5,540	8,630	69,392
1985–6	540	3,180	18,909	1,449	662	704	980	7,183	1,185	3,098	634	2,449	217	6,399	9,200	76,070
1986–7	600	3,485	20,976	1,387	710	722	1,117	7,819	1,419	3,430	550	3,214	229	7,452	9,400	83,793
1987–8	573	3,727	20,065	1,404	749	698	1,055	7,843	1,511	3,430	683	3,564	219	7,617	9,000	83,500
1988–9	611	3,774	20,533	1,323	748	648	930	8,093	1,424	3,485	778	3,968	188	7,782	9,200	85,352
1989–90	598	3,507	19,662	1,414	588	571	946	8,615	1,447	3,205	751	5,063	153	8,759	9,200	86,552
1990–1	650	3,325	20,425	1,433	415	520	995	9,051	1,575	2,940	768	5,775	110	8,500	8,740	86,377
1991–2[4]	700	3,400	21,463	1,435	415	494	1,035	9,323	1,591	2,764	806	6,300	102	8,500	8,303	88,406

[1] Preliminary. [2] Except for the U.S. which are in running bales. [3] Includes estimates for hand spinning in some countries. Excludes cotton burned or otherwise destroyed. [4] Estimate. *Source: International Cotton Advisory Committee* T.173



Average Spot Cotton Prices,[2] C.I.F. Northern Europe In Cents Per Pound (Equivalent U.S. ¢/Lb.)

Crop Year (Aug.-July)	M&SM 1"–1 3/32"														
	Argentine "C" 1 1/8"	Australian M-1 3/32	Central Amer.[3] M 1 3/32"	Chinese	Egypt Giza /69/75/81 FG	Greece M 1 3/32"	Mexico M 1 3/32"	Pakistan N.T.[6] Sind SG	Peru Tanguis #3	Tanzania A.R. MWANZA[5]	Turkey Izmir (12 MIR)	SM 1 1/8" U.S. Calif. ACALA	U.S. Memphis M 1 3/32"	U.S. Orleans/ Texas	USSR[4] Vtoroi
1978–79			75.23			83.09	75.99		97.79		73.46	82.96	76.25	67.22	77.92
1979–80			83.63		136.37	84.00	85.86	75.41	101.14	92.33	90.25	90.69	87.49	75.36	85.89
1980–81	83.18		93.47		137.66	100.53	94.91	84.94	104.15	103.25	96.65	101.85	101.23	89.14	92.80
1981–82	63.75		72.87		115.73	81.00	75.28	65.65	83.42	88.08	77.55	79.79	76.30	66.76	73.02
1982–83	41.58		76.14		110.07	85.74	76.39	65.59	82.58	87.50	83.44	84.94	77.94	68.11	70.68
1983–84	83.27	90.83	86.81		134.07	94.37	87.42	75.20	102.50	95.14	92.74	94.90	87.09	78.41	91.15
1984–85	60.96	67.79	66.96	62.50	134.01	74.36	70.14	56.22	82.64	78.36	74.58	76.20	73.69	65.95	—
1985–86	48.34	50.15	51.38	49.88	111.40	50.98	52.94	37.35	74.26	55.81	54.13	59.43	58.28	52.26	47.63
1986–87	68.82	67.05	63.09	62.40	112.59	63.53	64.86	55.48	85.43	67.41	64.87	74.27	62.17	56.38	62.85
1987–88	61.93	75.99	72.93	77.31	145.11	83.85	75.18	66.47	117.18	87.96	86.21	81.17	76.29	72.07	76.18
1988–89[1]	63.87	71.94	60.76	69.11	176.85	62.93	61.64	57.17	75.84	69.05	66.77	77.09	68.94	63.14	66.18
1989–90[1]	76.74	84.37	80.78	85.81	189.54	83.73	82.59	77.10	84.31	86.80	90.45	88.67	83.84	79.01	82.07
May '90	79.70	87.60	N.A.	84.00	191.50	85.80	N.A.	80.35	N.A.	N.A.	93.00	94.20	88.90	83.90	N.A.
June '90	83.25	89.88	N.A.	N.A.	191.50	88.00	N.A.	81.88	N.A.	N.A.	N.A.	96.94	92.69	85.75	N.A.
July '90	85.25	88.56	N.A.	N.A.	191.75	87.94	N.A.	83.25	N.A.	N.A.	N.A.	96.25	95.88	85.94	N.A.
Aug. '90	83.30	86.70	80.45	84.40	192.50	85.20	82.90	76.05	N.A.	90.70	N.A.	87.45	80.50	77.70	82.50
Sept. '90	77.50	83.75	81.25	85.63	192.50	84.31	83.38	76.63		90.31	N.A.	89.69	81.69	79.06	81.25
Oct. '90	76.75	83.63	81.38	86.06	192.50	81.81	83.31	76.38		89.19	86.88	90.38	82.44	79.25	81.25
Nov. '90	77.00	83.70	82.95	86.60	171.50	83.10	83.40	76.90		81.65	86.60	90.30	83.20	79.00	83.00
Dec. '90	77.50	84.25	83.83	87.58	171.50	83.00	83.83	79.50		89.33	85.58	91.17	84.00	77.33	83.67
Jan. '91	77.15	84.95	85.70	87.30	171.66	83.50	85.70	79.90		81.40	88.20	91.70	85.50	77.90	84.50
Feb. '91	78.94	89.88	90.25	90.00	171.70	85.88	91.25	79.38		90.00	89.00	98.38	93.75	83.69	84.69

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[1] Preliminary. [2] Generally for prompt shipment. [3] Cent. Amer. 1986–7 to date. Prior data for Guatemala SM 1 1/16". [4] Prior to 11/81 PERVY-SM 1/16". [5] No. ½ until 2/86; No. 3 since. [6] Afzal since 1/86. *Source: International Cotton Advisory Committee* T.172

Average Price of Strict Low Middling, 1 1/16", Cotton at Designated U.S. Markets ¢/Lb. (Net Weight)

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
1982–3	60.38	58.98	58.58	58.20	59.65	60.16	61.72	66.05	65.33	66.88	70.74	70.27	63.08
1983–4	72.93	71.68	72.01	73.41	73.04	70.55	71.38	74.89	75.64	79.44	75.00	67.35	73.11
1984–5	63.01	61.16	61.15	60.43	60.45	59.96	58.65	60.18	61.71	60.11	59.76	59.55	60.51
1985–6	57.87	56.38	56.14	56.03	56.25	58.39	59.81	61.75	62.62	63.95	65.24	65.73	60.01
1986–7	26.81	33.56	43.95	45.74	54.19	57.17	54.75	54.60	57.72	65.94	70.42	73.07	53.16
1987–8	75.89	71.41	64.30	64.66	62.26	59.69	57.83	59.64	60.07	61.55	62.86	57.40	63.13
1988–9	55.20	51.25	52.20	53.40	54.80	55.67	55.37	57.59	61.43	63.70	64.06	67.39	57.67
1989–90	69.88	68.46	69.40	68.33	63.56	62.21	64.95	68.06	71.31	74.61	77.06	79.53	69.78
1990–1	76.27	71.01	70.54	69.48	69.92	70.50	77.69	77.92	79.94	83.94	79.05	71.33	74.80
1991–2	66.44	62.39	58.28	54.70									

Note: Grade 41. *Source: Department of Agriculture* T.190

Average Spot Cotton, 1 3/32", Price (SLM) at Designated U.S. Markets In Cents Per Pound (Net Weight)

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average	1 1/32"	1"
1982–3	60.76	59.36	58.97	58.57	60.02	60.53	62.09	66.43	65.72	67.31	71.20	70.73	63.47	61.17	56.41
1983–4	70.52	69.29	69.49	70.82	70.44	68.03	68.98	72.56	73.37	77.18	72.74	65.11	73.55	70.71	66.32
1984–5	63.45	61.60	60.71	59.99	60.01	59.52	58.21	59.74	61.27	59.67	59.32	59.99	60.29	58.30	55.98
1985–6	57.40	55.89	55.66	55.55	55.77	57.92	59.34	61.28	62.15	63.48	64.77	66.20	59.62	57.87	55.81
1986–7	27.39	35.56	44.53	46.27	54.71	57.70	55.26	55.12	58.24	66.46	70.94	73.59	53.81	50.78	47.77
1987–8	76.42	71.99	64.84	65.17	62.76	60.14	58.28	60.12	60.55	62.03	63.34	57.88	63.63	60.81	59.33
1988–9	55.69	51.80	52.66	53.80	55.20	56.07	55.77	58.04	61.94	64.21	64.57	67.92	58.14	53.99	52.32
1989–90	70.42	69.00	69.89	68.75	63.99	62.63	65.37	68.48	71.73	75.03	77.48	79.95	70.23	66.02	64.89
1990–1	76.69	71.43	70.97	69.97	70.43	71.09	78.45	78.63	80.65	84.60	79.69	71.99	75.38	71.52	69.15
1991–2	66.88	62.75	58.63												

Source: Agricultural Marketing Service, U.S.D.A. T.191

Average Spot Prices of U.S. Cotton,[1] Base Quality—(SLM) at Designated Markets In Cents Per Pound

Yr. Begin. Aug. 1	Atlanta	Augusta	Charleston	Dallas (East Tex.-Okl.)	Fresno (San Joaquin Valley)	Galveston	Greenville (Southeast)	Greenwood (South Delta)	Houston	Little Rock	Lubbock (West Texas)	Memphis (North Delta)	Montgomery (Southeast)	Phoenix (Desert So. West)	Average
1981–2	—	61.87	—	58.32	61.02	—	61.57	61.34	—	—	57.96	61.00	61.34	59.93	60.48
1982–3	—	—	—	61.62	64.49	—	63.50	63.35	—	—	60.84	63.33	63.50	63.17	63.08
1983–4	—	—	—	70.79	77.02	—	73.28	73.14	—	—	70.35	73.25	72.93	74.13	73.11
1984–5	—	—	—	58.94	61.29	—	61.08	60.98	—	—	58.93	60.73	60.56	61.57	60.51
1985–6	—	—	—	58.96	60.35	—	60.52	60.69	—	—	59.17	60.40	60.17	59.84	60.01
1986–7	—	—	—	51.03	60.97	—	51.66	51.99	—	—	51.20	51.70	51.34	55.38	53.16
1987–8	—	—	—	61.14	66.02	—	63.37	62.41	—	—	61.09	62.54	62.79	65.69	63.13
1988–9	—	—	—	55.88	63.30	—	57.26	56.67	—	—	55.77	56.71	57.26	59.67	57.90
1988–9	—	—	—	55.88	63.30	—	57.26	56.67	—	—	55.77	56.71	57.26	59.67	57.90
1989–90	—	—	—	67.11	73.47	—	70.64	69.50	—	—	67.06	69.51	70.64	71.19	69.78
1990–91				71.40	78.30		75.90	75.53			71.09	75.49	75.90	75.90	74.80

[1] Mixed Lots, Net Weight, uncompressed in warehouse. *Source: Agricultural Marketing Service, U.S.D.A.* T.177

Avg. Price[1] Received by Farmers for Upland Cotton in the U.S. In Cents Per Pound

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average[1]
1981–2	65.0	58.1	63.2	61.1	51.5	50.3	49.1	50.4	54.3	55.8	58.1	59.9	54.0
1982–3	52.7	56.0	60.9	61.0	57.7	57.0	57.7	62.2	60.4	63.6	62.6	67.1	59.5
1983–4	64.6	62.8	63.1	67.0	66.2	62.7	65.0	70.1	67.2	72.7	68.0	65.9	65.3
1984–5	67.3	65.6	64.4	62.0	56.1	52.2	49.5	56.1	57.0	57.5	60.3	60.5	58.7
1985–6	56.6	55.9	57.3	56.5	53.7	54.0	56.9	58.1	59.2	58.5	58.5	61.5	56.8
1986–7	46.8	48.6	50.0	52.6	52.7	52.1	46.4	47.5	50.4	60.0	66.2	68.3	51.5
1987–8	63.8	65.4	65.1	65.6	64.6	61.7	57.0	57.9	59.9	58.3	62.0	59.5	63.7
1988–9	53.5	51.9	55.1	57.5	55.3	60.2	52.8	63.9	65.8	66.2	57.2	59.5	63.6
1989–90	60.4	63.8	65.8	65.6	61.9	60.2	61.0	63.8	65.8	66.2	64.0	63.9	63.6
1990–1[2]	64.7	65.2	67.7	68.4	67.1	64.9	67.9	68.9	69.5	70.1	67.5	66.3	67.1
1991–2[2]	66.9	65.2	62.4										

[1] Weighted average by sales. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.187

COTTON

Purchases Reported by Exchanges in Designated U.S. Spot Markets In Running Bales

Yr. Begin August 1	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1985	166,725	152,795	258,891	395,097	570,460	671,758	389,436	416,654	487,813	626,319	968,185	690,947	5,795,080
1986	585,628	638,356	392,451	422,542	1,353,241	1,055,081	633,852	354,643	501,265	354,008	163,307	160,474	6,614,848
1987	152,935	252,669	650,349	718,829	1,065,457	622,727	571,851	463,739	266,545	572,702	336,191	117,645	5,791,639
1988	288,187	166,692	230,724	163,642	323,025	383,699	811,630	388,169	307,937	282,564	261,958	282,288	3,890,515
1989	119,516	49,237	89,853	214,910	258,849	388,519	333,417	206,528	157,187	88,966	42,299	46,312	1,993,593
1990	36,735	53,948	154,499	376,790	600,752								

[1] Purchases are for 10 markets; commencing February 1980 purchases are for nine markets; and commencing March 28, 1983 purchases are for eight markets. *Source: Agricultural Marketing Service: U.S.D.A.* T.190a

Average Open Interest of Cotton Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	18,347	18,741	18,216	15,915	15,048	15,986	17,439	20,003	21,220	22,049	23,489	22,354
1986	23,451	21,654	20,686	20,088	22,473	23,566	22,399	26,058	26,379	24,277	22,056	22,320
1987	25,196	25,048	22,482	23,760	26,074	27,996	32,012	37,426	39,204	39,912	38,017	33,888
1988	35,240	35,974	30,507	29,933	29,753	31,804	28,307	34,637	38,453	37,162	33,210	30,682
1989	31,415	30,978	36,725	36,657	40,761	38,693	40,059	45,894	49,629	49,072	48,136	42,349
1990	40,237	36,291	36,073	37,829	37,908	38,556	36,083	34,042	35,250	40,431	43,997	40,241
1991	42,766	46,793	44,001	43,957	50,086	46,637	40,924	39,616	38,252	39,772	39,295	36,066

Source: N.Y. Cotton Exchange T.182

Volume of Trading of Cotton Futures at New York In Contracts

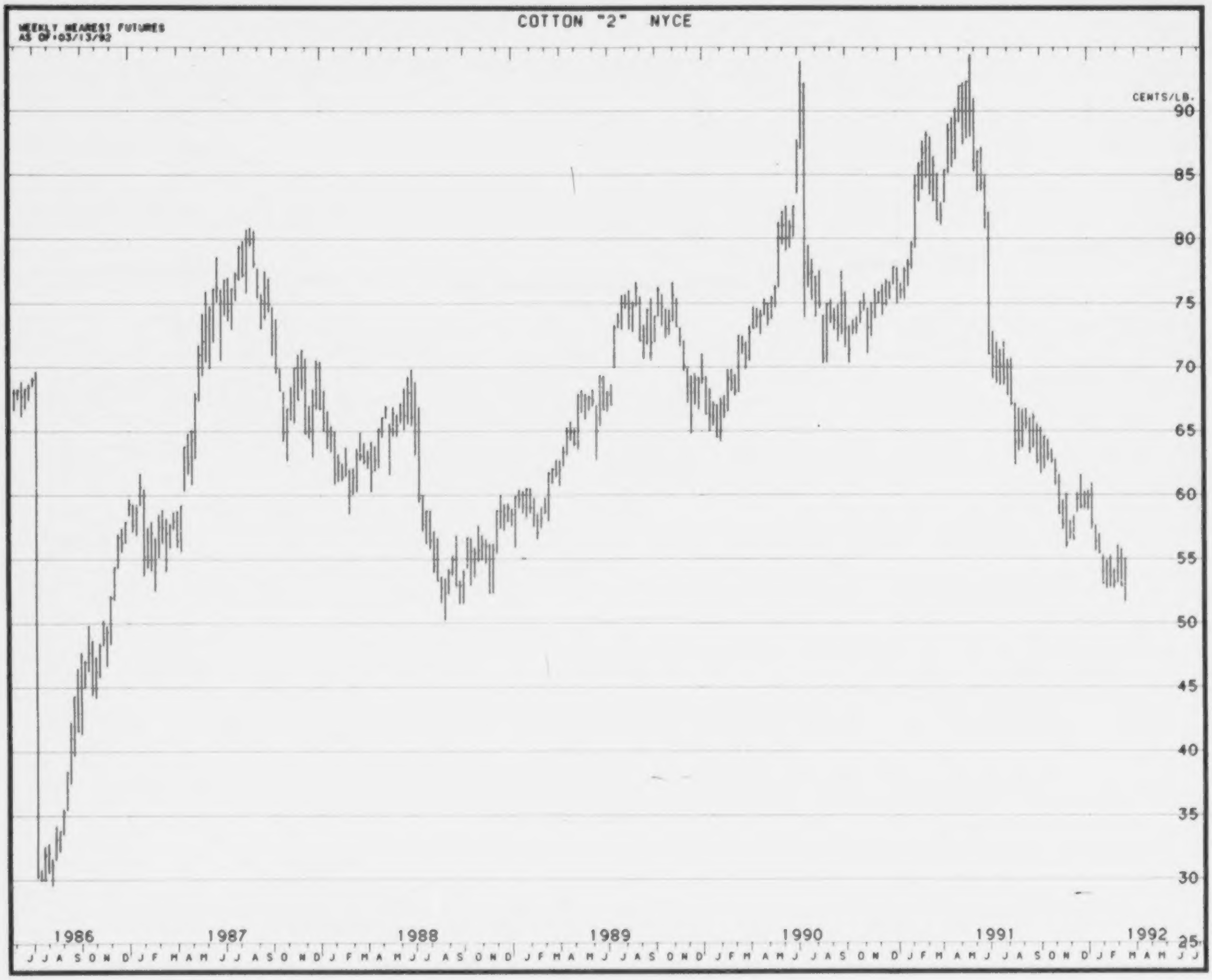
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	61,860	57,034	61,921	65,709	47,606	47,604	41,069	40,524	42,747	55,046	63,829	51,543	636,492
1986	73,576	77,152	57,433	74,520	57,479	64,742	75,545	94,025	130,989	111,359	113,812	84,618	1,015,392
1987	110,165	106,520	88,621	106,620	110,303	132,180	98,339	127,048	131,214	124,319	126,582	107,124	1,395,980
1988	114,672	119,832	97,533	118,614	127,880	149,303	89,907	100,447	108,285	135,221	124,221	84,334	1,370,249
1989	124,764	135,963	113,028	118,573	135,044	167,442	91,381	151,034	165,255	143,713	178,889	124,034	1,649,120
1990	135,260	116,806	126,820	121,203	139,489	135,040	132,329	129,081	103,936	142,670	150,958	98,895	1,534,611
1991	133,415	179,656	148,918	156,978	174,690	122,242	116,458	115,175	107,742	125,558	150,545		

Source: N.Y. Cotton Exchange T.183

High, Low & Closing Prices of May Cotton Futures at New York In Cents per Pound

Year of Delivery		Year Prior to Delivery										Delivery Year					Life of Delivery Range
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1985	High	81.85	78.00	79.25	79.15	75.25	71.80	69.00	72.05	71.30	67.66	68.20	66.85	68.25	70.45	68.98	79.25
	Low	77.70	75.80	77.45	75.00	69.60	68.74	67.60	67.36	66.45	66.20	65.70	63.28	63.26	64.75	66.10	63.26
	Close	81.74	78.00	78.60	75.00	69.75	69.15	68.00	69.85	66.95	66.95	65.76	64.18	67.60	66.40	66.33	—
1986	High	67.55	67.88	66.65	64.25	62.90	61.10	60.90	62.39	63.45	62.10	63.60	64.48	65.85	67.25	68.05	70.55
	Low	66.35	66.52	61.86	62.00	59.95	59.30	59.25	60.45	60.50	59.60	58.80	59.50	61.90	60.70	66.00	58.80
	Close	67.55	66.52	63.13	63.00	60.25	60.05	60.48	67.34	60.75	62.06	60.32	63.45	65.69	66.80	67.20	—
1987	High	46.70	41.85	40.55	37.30	35.25	38.40	48.90	50.90	52.96	59.50	60.15	57.00	58.70	64.85	66.10	66.10
	Low	40.50	38.30	36.70	33.60	31.56	32.40	35.44	45.51	46.35	52.60	53.30	52.10	54.00	55.55	62.85	31.56
	Close	41.00	40.70	36.73	33.93	34.40	38.40	47.50	47.00	52.96	59.25	54.30	54.60	57.05	64.45	65.61	—
1988	High	56.80	65.23	74.60	74.25	78.35	81.70	78.85	74.60	73.00	71.20	68.90	64.50	64.90	66.05	67.00	81.70
	Low	52.62	55.90	64.00	68.50	71.75	76.20	72.65	65.00	67.81	63.90	61.60	59.20	60.71	60.25	66.00	50.50
	Close	56.22	65.23	71.30	72.50	78.05	78.50	74.05	68.75	70.05	67.65	62.41	61.28	62.88	66.05	66.73	—
1989	High	59.90	58.75	63.60	68.70	62.90	56.80	56.18	57.80	57.20	59.79	60.70	60.85	62.75	65.75	68.20	68.70
	Low	57.55	55.35	57.00	60.70	55.70	49.03	50.10	51.75	53.22	55.70	56.01	57.30	59.70	62.20	63.50	49.03
	Close	58.80	56.90	61.75	60.88	56.15	51.72	51.42	56.00	56.70	58.45	60.20	60.54	61.97	64.00	67.71	—
1990	High	65.40	66.52	70.50	72.70	77.45	78.30	76.85	77.50	78.85	72.38	69.75	71.30	73.25	75.85	75.00	78.85
	Low	61.38	64.25	65.90	65.30	71.60	74.95	73.10	74.70	70.75	66.75	65.65	67.58	69.35	72.32	73.20	55.25
	Close	65.27	65.92	70.11	72.00	76.75	76.10	75.10	77.36	71.88	69.49	68.18	70.16	72.70	73.73	74.42	—
1991	High	67.57	68.05	70.50	75.30	77.40	74.80	75.23	75.65	75.25	76.30	78.70	87.95	88.85	90.75	92.25	
	Low	65.50	66.12	68.00	70.32	72.13	70.61	72.42	72.85	72.15	73.80	73.80	77.97	81.09	82.81	90.60	
	Close	66.45	68.05	70.23	75.26	73.77	74.00	73.40	75.13	73.88	76.50	78.10	87.43	81.82	90.73	92.22	

Source: N.Y. Cotton Exchange T.184



United States Government Crop Forecasts and Actual Cotton Crops

	Forecasts of Production (1,000 Bales of 480 Lbs.[1])							Forecasts of Yields (In Lbs. Per Harv. Acre)						
Year	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Actual Crop	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Actual Yield
1976	10,734	10,375	10,251	9,891	10,264		10,581	466	451	445	435	451		465
1977	13,535	13,302	13,317	13,832	14,496		14,389	506	495	500	503	525		520
1978	11,820	11,155	10,873	10,981	10,841		10,856	462	425	429	418	421		420
1979	13,710	14,245	14,356	14,544	14,527		14,629	497	525	528	535	534		547
1980	12,812	11,689	11,589	11,224	11,125		11,122	461	421	419	408	411		404
1981	14,789	15,507	15,476	15,560	15,733		15,646	515	540	540	543	546		542
1982	11,143	11,029	11,365	11,947	12,102		11,963	563	569	587	605	613		590
1983	7,810	7,776	7,550	7,497	7,725		7,771	503	501	487	504	506		508
1984	12,569	13,276	13,272	13,271	13,292		12,982	583	615	620	613	610		600
1985	13,780	13,655	13,638	13,875	13,810	13,534	13,432	638	632	633	644	644	630	630
1986	10,676	10,506	10,006	9,875	9,792	9,785	9,731	573	565	539	546	539	553	552
1987	12,907	12,846	13,336	13,936	14,281	14,724	14,760	615	616	640	671	695	703	706
1988	14,934	14,709	14,714	14,837	15,197	15,446	15,411	616	605	605	612	627	623	619
1989	11,834	12,279	11,991	12,102	12,083	12,333	12,196	618	603	607	608	619	619	614
1990	14,864	14,722	14,540	14,905	15,399	15,617	15,499	622	616	609	622	640	640	634
1991	17,648	17,868						630	638					

[1] Net Weight bales. *Source: Crop Reporting Board, U.S.D.A.*

T.175

U.S. Production of Cotton (Upland) & American-Pima In Thousands of 480-Lb. Bales

	Upland														
Crop Year	Alabama	Arizona	Arkansas	California	Georgia	Louisiana	Mississippi	Missouri	No. Car.	Oklahoma	So. Car	Tennessee	Texas	New Mexico	Total Amer. Pima
1978	291	1,068	660	1,940	111	478	1,378	188	45	355	115	235	3,792	101	93.4
1979	324	1,280	606	3,408	152	690	1,437	157	43	522	116	171	5,515	104	98.6
1980	275	1,354	444	3,109	86	460	1,143	177	52	205	77	200	3,320	107	104.2
1981	422	1,556	604	3,535	159	742	1,565	168	95	440	164	315	5,663	141	79.6
1982	460	1,095	534	3,073	235	870	1,760	204	102	238	155	339	2,700	78	98.7
1983	183	725	323	1,971	112	532	900	73	43	145	53	151	2,380	70	94.7
1984	447	1,097	612	2,913	281	1,056	1,650	187	120	183	170	337	3,680	87	130.4
1985	545	928	703	3,114	370	742	1,655	204	117	285	180	419	3,910	71	155.1
1986	330	675	602	2,245	185	673	1,190	196	109	210	87	396	2,535	62	205.9
1987	397	849	901	2,989	338	977	1,745	330	98	346	106	634	4,635	89	284.6
1988	380	865	1,044	2,824	370	948	1,825	306	133	303	140	584	5,215	102	334.2
1989	383	649	851	2,661	342	868	1,555	269	141	173	154	476	2,870	80	691.7
1990	375	805	1,081	2,734	405	1,177	1,850	314	263	382	145	495	4,965	95	358.5
1991[1]	520	890	1,550	2,450	700	1,390	2,250	425	650	250	330	700	5,300	85	414.1

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.176

Gross Entries of Cotton into U.S. Government Loan Program In Thousands of Bales

Crop Yr.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May[1]	June[1]	July[1]	Total
1978–9	0	5	26	89	215	584	352	189	68	16	14	[2]	1,560
1979–0	0	[2]	23	294	319	600	316	110	51	35	8	[2]	1,759
1980–1	0	[2]	8	253	528	912	343	204	36	28	16	[2]	2,328
1981–2	0	9	132	293	1,081	2,796	1,120	473	117	39	21	2	6,083
1982–3	0	46	143	674	1,857	1,590	4,503	4,160	43	23	13	3	5,062
1983–4	0	0	165	227	253	513	188	264	127	9	32	5	1,765
1984–5	0	1	11	98	563	776	1,057	324	62	44	32	5	2,977
1985–6	31	202	771	1,497	1,406	2,375	781	159	61	12	40	60	7,365
1986–7	22	136	775	1,146	1,124	1,664	662	504	97	40	30	6	6,204
1987–8	[2]	25	400	839	745	1,503	1,305	321	170	44	18	9	5,381
1988–9	10	192	1,131	2,015	2,649	2,400	2,441	354	19	7	8	—	11,238
1989–90	—	21	119	997	765	1,718	130	22	8	1	1	0	3,743
1990–1	0	1	363	575	762	1,302	127						

NOTE: Seasonal totals are net, due to allowances for rejections. [1] Entries after April 30 represent late reporting. [2] Less than one thousand bales. *Sources: N.Y. Cotton Exchange; Commodity Credit Corporation* T.178

U.S. Daily Rate of Upland Cotton Mill Consumption[2] on Cotton-System Spinning Spindles
In Thousands of 480 Lb. Bales

Crop Yr.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
1980–1	22.1	22.8	23.9	22.9	19.0	21.8	22.3	21.5	21.7	22.1	21.3	19.3	21.7
1981–2	21.4	20.7	22.4	20.1	16.0	18.9	19.9	19.7	20.5	19.6	18.4	16.0	19.5
1982–3	19.3	19.0	20.8	19.5	17.0	20.2	21.5	22.0	21.5	22.0	21.7	18.4	20.2
1983–4	22.6	22.4	22.9	22.3	18.7	23.5	22.4	21.9	21.5	22.1	20.1	17.7	21.6
1984–5	21.4	20.4	21.4	19.5	16.9	20.0	20.9	20.8	21.0	21.9	21.0	18.5	20.3
1985–6	22.9	22.5	24.6	23.9	19.5	23.8	24.9	24.6	24.8	25.2	24.4	20.9	23.4
1986–7	26.7	26.2	27.3	26.5	23.1	27.3	28.1	29.4	28.7	29.3	28.3	27.0	27.3
1987–8	30.3	30.1	31.0	30.3	24.4	28.4	29.5	29.5	27.8	27.6	26.5	21.7	28.1
1988–9	28.8	27.7	27.6	26.1	22.9	28.3	29.2	30.0	31.2	32.2	31.9	27.9	28.6
1989–90	34.1	42.7	34.3	31.9	33.9	31.2	32.6	40.8	32.2	33.1	41.0	27.8	32.3
1990–1[1]	33.8	41.4	33.3	30.2	29.7	1,025.3			1,100.7			—	
1991–2[1]	1,091.2	—											

[1] Preliminary. [2] Not seasonally adjusted. *Source: Bureau of the Census; U.S.D.C.* T.180

Consumption of American and Foreign Cotton in the United States In Thousands of Running Bales

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1980–1	443	456	597	458	475	435	446	539	435	441	531	385	5,641
1981–2	429	517	448	403	400	378	398	493	410	392	460	317	5,038
1982–3	386	474	416	391	425	404	430	549	431	441	543	369	5,259
1983–4	453	560	459	446	468	469	448	548	430	442	503	354	5,628
1984–5	428	509	428	390	423	399	418	519	419	439	525	369	5,268
1985–6	458	562	493	477	486	595	499	492	620	503	489	522	6,198
1986–7	534	523	683	529	576	546	562	734	573	586	708	540	7,096
1987–8	606	753	621	606	610	568	590	738	556	551	662	433	7,294
1988–9	577	693	552	523	572	568	584	751	623	645	798	559	7,444
1989–90	663	829	665	617	653	605	633	794	624	641	826	559	8,109
1990–1	680	835	671	610	601	—		2,068			2,212		8,383
1991–2		2,200											

[1] Preliminary. *Source: Bureau of the Census*

T.188

Exports of All Cotton[2] from the United States In Thousands of Running Bales

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1980–1	403	461	195	422	674	660	608	792	438	404	402	222	5,639
1981–2	233	198	211	545	698	669	756	793	765	450	560	386	6,263
1982–3	348	304	248	442	357	472	355	435	557	511	381	467	4,961
1983–4	369	329	308	438	566	821	737	783	839	494	429	370	6,419
1984–5	454	249	340	472	712	755	705	692	556	435	59	299	5,943
1985–6	166	218	180	198	236	189	202	206	125	69	68	19	1,875
1986–7[2]	374	496	489	525	664	591	518	750	500	465	554	439	6,366
1987–8	355	304	316	612	536	698	879	649	565	537	486	359	6,297
1988–9	248	173	292	352	524	756	514	597	575	795	515	649	5,987
1989–90	431	384	507	469	516	909	840	882	818	495	510	550	7,310
1990–1	480	355	433	591	639	1,112	950	804	960	488	404	273	7,488
1991–2[1]	219	126	239	396	675								

[1] Preliminary. [2] Data prior to Aug. 1986 are for American cotton only. *Source: Foreign Agricultural Service, U.S.D.A.*

T.185

U.S. Exports of American Cotton to Countries of Destination In Thousands of 480-Pound Bales

Yr. Beg. Aug. 1	Bangladesh	Canada	Hong Kong	France	Germany	Egypt	Italy	Japan	Indonesia	Spain	Sweden	United Kingdom	Rep. of Korea	P.R. China	Taiwan	USSR	World Total
1980–1	33	267	205	42	112		54	1,139		60	10	38	1,303	1,375	351		5,926
1981–2	50	167	243	58	119		106	1,626		57	17	43	1,412	848	777	0	6,567
1982–3	88	238	158	45	163		105	1,286		72	23	50	1,322	20	378	192	5,207
1983–4	135	227	283	154	195	0	252	1,709	320	114	28	67	1,269	12	495	351	6,785
1984–5	60	195	125	132	195	126	301	1,464	258	118	22	72	1,257	6	513	329	6,211
1985–6	14	98	1	8	85	120	91	520	105	29	15	35	513	0	46	0	1,958
1986–7	89	70	324	114	263	68	263	1,330	1,723	60	15	56	46	0	52	0	6,684
1987–8	42	153	88	67	376	93	406	1,569	287	83	19	69	1,450	0	424	98	6,582
1988–9	58	148	108	9	255	102	239	1,381	307	51	16	37	1,302	793	254	2	5,850
1989–90	130	197	244	20	368	242	431	1,594	499	151	22	74	1,365	670	320	5	7,317
1990–1[1]	55	191	306	12	214	243	425	1,437	561	105	22	36	1,168	1,233	358	5	7,793

[1] Preliminary. *Source: Bureau of the Census*

T.189

Cotton Government Loan Program in the United States

Crop Year Begin Aug.1	Support Price	Target Price	Put under Support	% of Production	CCC Acquired	CCC Owned July 31	Crop Year Begin Aug.1	Support Price	Target	Put under Support	% of Production	CCC Acquired	CCC Owned July 31
	— ¢ per lb. —		ths. bales		— ths. bales —			— ¢ per lb —		ths. bales		— ths. bales —	
1982–3	57.08	71.00	5,003	42.2	786	397	1987–8	52.25	79.40	5,362	37.1	105	3
1983–4	55.00	76.00	1,743	22.7	0	158	1988–9	51.80	75.90	11,231	74.4	66	50
1984–5	55.00	81.00	2,957	23.0	649	123	1989–90[1]	50.00	73.40	3,732		1	
1985–6	57.30	81.00	7,289	54.9	161	767	1990–1[1]	50.27	72.90				
1986–7	55.00	81.00	6,170	64.8	12	73	1991–2	50.77	72.90				

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.*

COTTON

U.S. Imports of Cotton Cloth (Raw Cotton Equivalent) In Thousands of Bales (Net Weight—480 Lbs.)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	99.2	96.5	102.1	97.9	79.1	98.9	101.7	91.3	80.1	80.6	66.0	59.8	1,053.2
1985	60.5	85.4	86.0	77.3	94.0	81.5	81.2	72.6	91.8	95.5	98.9	100.2	1,024.9
1986	116.4	109.1	128.9	116.6	106.5	104.8	127.1	109.6	100.2	98.8	96.3	107.9	1,322.2
1987	119.9	142.1	136.4	119.6	119.3	140.4	143.3	140.4	130.1	146.6	143.8	135.3	1,617.2
1988[1]	98.7	102.6	107.6	98.6	90.4	87.3	86.0	91.6	87.2	92.9	94.5	109.4	1,146.8

[1] Preliminary. *Source: Bureau of the Census*

U.S. Exports of Cotton Cloth (Raw Cotton Equivalent) In Thousands of Bales (Net Weight—480 Lbs.)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	18.2	18.6	20.4	20.6	24.3	24.8	22.7	15.7	18.4	20.7	18.4	16.4	239.2
1983	20.1	15.1	18.2	17.2	14.2	15.9	12.7	14.0	15.4	16.0	15.3	14.8	188.8
1984	14.2	12.3	13.6	13.4	14.2	16.9	13.5	12.8	15.7	16.7	14.1	13.5	170.9
1985	18.7	15.2	19.8	21.2	17.3	18.6	15.7	21.6	24.7	17.4	15.6	14.7	220.5
1986	17.5	20.1	23.6	23.5	27.4	23.6	17.3	30.1	26.2	26.1	28.2	30.0	293.6
1987	20.2	27.5	25.4	21.7	20.3	22.1	19.0	23.0	19.9	20.6	20.5	19.9	260.0
1988[1]	18.5	18.1	23.9	20.4	19.3	20.4	16.8	19.3	25.0	20.5	22.8	25.4	250.4

[1] Preliminary. *Source: Bureau of the Census* T.193

United States Cotton Ginnings To: In Thousands of Running Bales

Crop Year	Aug. 1	Aug. 16	Sept. 1	Sept. 16	Oct. 1	Oct. 15	Nov. 1	Nov. 15	Dec. 1	Dec. 15	Jan. 1	Jan. 15	Feb. 1	Total Crop
1982–3	40	N.A.	453	578	1,529	2,660	5,288	7,202	8,823	9,627	10,574	10,974	11,300	11,526
1983–4	2	N.A.	315	397	763	1,748	3,348	4,638	6,003	6,880	7,209	7,389	7,476	7,504
1984–5	163	N.A.	634	780	1,175	2,277	4,321	7,025	8,972	10,478	11,079	11,682	12,319	12,545
1985–6	70	N.A.	681	1,073	2,431	4,342	6,246	8,216	10,052	11,372	12,365	12,776	12,948	12,988
1986–7	145	N.A.	624	1,022	2,407	3,618	5,292	6,369	7,491	8,263	8,588	9,093	9,270	9,438
1987–8	1	N.A.	429	1,242	3,196	5,359	7,531	9,135	11,082	12,588	13,276	13,737	14,180	14,358
1988—9	136	N.A.	804	1,147	2,279	4,108	6,888	9,449	11,698	13,257	14,248	14,686	14,904	14,985
1989–90	90	N.A.	382	524	981	2,773	5,806	8,389	10,357	11,297	11,558	11,684	11,771	11,774
1990–1[1]	120	N.A.	583	1,091	2,616	4,748	7,959	10,204	12,623	14,121	14,519	14,812	14,968	97,931
1991–2[1]	137	562	284	983	2,478				13,487	15,377				

[1] Preliminary. *Source: Bureau of Census* T.171

U.S. Fiber Prices In Cents per Pound

	Cotton[1]		Rayon[2]		Polyester[3]		Price Ratios[4] in Percent	
Year	Actual	Raw[5] Equivalent	Actual	Raw[5] Equivalent	Actual	Raw[5] Equivalent	Cotton/Rayon	Cotton/Polyester
1983	78	86	80	84	73	76	1.02	1.13
1984	76	84	84	88	79	82	.95	1.02
1985	66	73	79	82	66	69	.89	1.06
1986	61	68	76	79	62	65	.86	1.04
1987	73	81	81	84	66	69	.96	1.18
1988	65	72	91	94	74	77	.77	.94
1989	72	80	110	114	86	89	.70	.89
1990	79	88	120	125	83	86	.71	1.03
1991 Jan.	80	89	124	129	78	81	.69	1.10
Feb.	87	96	124	129	78	81	.75	1.19
Mar.	90	100	124	129	78	81	.77	1.23
Apr.	90	99	124	129	72	75	.77	1.33
May	94	104	124	129	72	75	.80	1.39
June	89	99	124	129	72	75	.76	1.32
July	80	89	124	129	72	75	.69	1.18
Aug.	75	83	124	129	72	75	.64	1.11
Sept.	72	80	124	129	72	75	.62	1.06
Oct.	68	75	116	121	72	75	.62	1.00

[1] SLM-1 1/16" at group B Mill points, net weight. [2] 1.5 and 3.0 denier, regular rayon staple. [3] Reported average market price for 1.5 denier polyester staple for cotton blending. [4] Raw fiber equivalent. [5] Actual prices converted to estimated raw fiber equivalent as follows: cotton, divided by 0.90, rayon and polyester, divided by 0.96. *Source: USDA, Agricultural Marketing Service and trade reports.*

Average Producer Price Index of Gray Cotton Broadwovens Index 1982 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	103.7	102.7	102.6	102.4	102.0	102.1	101.8	100.6	100.4	101.5	102.0	102.0	102.0
1986	101.6	101.2	100.8	100.7	101.0	101.0	101.2	101.0	101.3	101.2	101.5	101.2	101.1
1987	101.8	101.8	101.9	102.5	103.0	103.3	106.0	103.9	107.1	109.5	110.6	111.5	105.2
1988	112.7	114.3	114.5	115.9	116.2	116.1	115.9	115.6	114.8	111.9	112.5	112.3	114.4
1989	112.4	111.3	110.9	110.9	110.5	110.1	109.4	109.8	109.8	110.8	110.9	113.5	110.9
1990	113.7	113.8	113.8	114.0	114.1	109.9	115.1	115.1	112.3	112.5	116.1	116.4	113.8
1991[1]	113.3	113.6	114.1	114.5	114.9	115.2	115.3	115.1	115.1	115.2	115.7		

[1] Preliminary. *Source: Bureau of Labor Statistics* (0337-01) T.181

Cotton Cloth[1] Production in the United States In Millions of Linear Yards

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Year	Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Year
1982	979	961	868	987	3,794	1987	1,158	1,217	1,219	1,178	4,772
1983	1,068	1,052	1,032	1,040	4,192	1988	1,233	1,208	1,048	1,029	4,632
1984	1,069	1,031	947	955	4,002	1989[2]	1,150	1,192	1,134	1,106	4,589
1985	1,030	1,002	933	955	3,921	1990[2]	1,194	1,122	1,087	1,048	4,464
1986	1,037	1,103	1,095	1,129	4,364	1991	1,073	1,142			

[1] Cotton broadwoven goods over 12 inches in width. [2] Preliminary. *Source: Bureau of the Census* T.192

U.S. American Upland Cotton—Ginnings, by Staple Length In Thousands of Running of Bales

Year beginning August	(13/16") 26 & under	(7/8") 28	(29/32") 29	(15/16") 30	(31/32") 31	(1") 32	(1 1/32") 33	(1 1/16") 34	(1 3/32") 35	(1 1/8") 36	37 & Over	All staple lengths
1983	3	22	65	251	482	471	513	1,012	2,531		2,063	7,413
1984	7	45	122	414	761	719	715	1.149	2,858		5,630	12,419
1985	—	5	38	234	825	889	883	1,679	4,182	2,380	1,721	12,837
1986	—	2	13	58	226	491	1,058	1,859	3,184	2,159	186	9,237
1987	1	4	18	71	277	698	1,505	2,643	5,119	—3,748—		14,083
1988[1]	2	16	78	303	929	1,394	1,438	1,567	3,579	—5,148—		14,462

[1] Preliminary. *Source: Agricultural Marketing Service, U.S.D.A.* T.179

Raw Cotton Equivalent of U.S. Textile Imports In Thousands of Pounds

	Yarn, Thread, and Woven Fabric				Primarily Manufactured Products									
		Woven Fabric												
Year	Yarn	100 percent cotton	Blends	Total All	Pile fabrics and mfrs.	Bed clothes and towels	Gloves hosiery, and hdkf.	Other wearing apparel	Lace fabric and articles	House-hold and clothing articles	Misc. products	Floor cover-ing	Total All	Grand total imports
1983	40,881	274,467	64,108	380,706	7,721	70,067	25,383	597,423	5,957	11,855	28,426	7,526	754,796	1,135,502
1984	52,897	360,791	90,126	505,533	12,572	106,468	26,609	733,111	9,651	18,652	37,741	14,649	959,942	1,465,575
1985	53,818	341,896	93,569	491,874	17,916	127,494	30,052	865,476	10,372	19,681	46,197	17,984	1,137,294	1,629,166
1986	103,249	431,289	97,468	634,678	19,576	133,637	27,054	988,906	6,787	30,095	46,410	18,389	1,275,799	1,910,477
1987	131,969	559,245	82,529	776,258	20,153	152,745	31,591	1,234,040	7,113	30,758	53,153	20,657	1,559,438	2,335,692
1988	93,189	377,182	77,720	550,451	22,301	161,893	35,762	1,218,801	9,754	34,461	51,596	21,232	1,568,317	2,115,775

Source: Bureau of the Census

Raw Cotton Equivalent of U.S. Textile Exports In Thousands of Pounds

	Semi-Manufactured					Manufactured Products								
								Wearing Apparel						
Year	Yarn	Sewing thread crochet, darning and em-broidery cotton	Fabric standard construc-tions	Other fabric	Total all	Blankets, spreads, pillow cases, and sheets	Towels	Knit	Other than knit	Other house-hold and clothing articles	Floor cover-ing	Indus-trial products	Total all	Grand total exports
1983	18,854	11,577	51,667	7,747	90,636	8,725	5,705	27,957	44,113	13,736	13,986	11,601	128,977	219,614
1984	11,186	8,369	55,848	5,997	82,047	9,008	4,470	25,904	42,360	13,894	9,813	15,014	124,032	206,081
1985	16,843	8,466	74,919	5,134	105,892	9,802	3,582	25,326	30,158	11,037	8,155	16,541	107,332	213,224
1986	9,892	6,049	118,154	6,202	140,925	8,192	4,515	27,413	46,437	13,860	9,793	20,992	133,904	274,828
1987	13,491	5,207	99,536	5,643	124,803	8,516	6,224	47,823	60,584	13,189	12,142	21,673	173,200	298,004
1988	22,678	3,391	87,264	5,747	120,171	10,559	8,093	55,054	68,101	15,626	20,389	27,384	210,100	330,271

Source: Bureau of the Census

Cottonseed and Products

World cottonseed production in 1991/92 was expected to rise to 34.6 million tonnes from 33.6 million the previous season because of larger cotton crops in China, the U.S., and Pakistan. The global crush was projected to increase to 27 million tonnes from 25.9 million the year before.

With respect to cotton oil, worldwide output was slated to expand to 3.9 million tonnes from 3.8 million in 1990/91. Export trade in oil was expected to be 370,000 tonnes, compared with 330,000 in 1990/91. The U.S., Brazil and, in some years, China, are the leading cotton oil exporters. Egypt is the world's chief importer, followed by Japan.

Within the U.S., cottonseed production in 1991 was the largest in decades at 6.8 million tons and compared with 6 million the year before. The domestic crush was pegged at 3.9 million short tons, the largest in ten years. Domestic ending stocks of cottonseed were projected to rise considerably to 1 million tons from 685,000 the year before. The average price received by U.S. farmers was slated to tumble to $65-$85 a ton from $121 in 1990/91.

U.S. cotton oil production in 1991/92 was expected to be the largest in ten years at 1.29 billion pounds. Exports were forecast to rise to 325 million pounds from the previous year's 250 million, but that was mediocre when compared with levels in the late 1970s and early 1980s.

The USDA maintains a Cottonseed Oil Assistance Program (COAP), under which oil is exported to Egypt, Turkey, Venezuela, and the Dominican Republic at subsidized prices.

World Production of Cottonseed In Thousands of Metric Tons

Crop Year	Argentina	Brazil	China	Egypt	Greece	India	Israel	Mexico	Pakistan	Peru	South Africa	Turkey	United States	USSR	Zimbabwe	World Total
1983–4	326	995	7,883	680	190	2,647	187	377	1,021	100	68	835	2,791	3,980	150	25,248
1984–5	293	1,758	10,639	664	243	3,447	185	459	2,014	145	89	928	4,671	4,760	186	33,915
1985–6	218	1,405	7,050	695	278	3,652	160	355	2,468	167	94	810	4,789	5,100	164	30,631
1986–7	193	1,085	6,018	645	327	3,218	123	243	2,640	109	154	829	3,448	4,870	156	27,230
1987–8	467	1,550	7,217	562	300	3,202	97	370	2,935	143	134	860	5,234	4,485	211	31,311
1988–9	318	1,195	7,053	488	400	3,563	104	617	2,851	136	140	1,000	5,499	5,000	162	32,324
1989–90[1]	450	1,290	6,440	490	437	4,490	81	325	2,910	110	140	900	4,240	4,700	137	30,490
1990–1[2]		1,300	7,660			4,000			3,270				5,410	4,930		33,530
1991–2[2]		1,300	8,500			4,200			3,400				6,190			34,870

[1] Preliminary. [2] Estimated. *Source: Foreign Agricultural Service, U.S.D.A.* T.194

Salient Statistics of Cottonseed in the United States

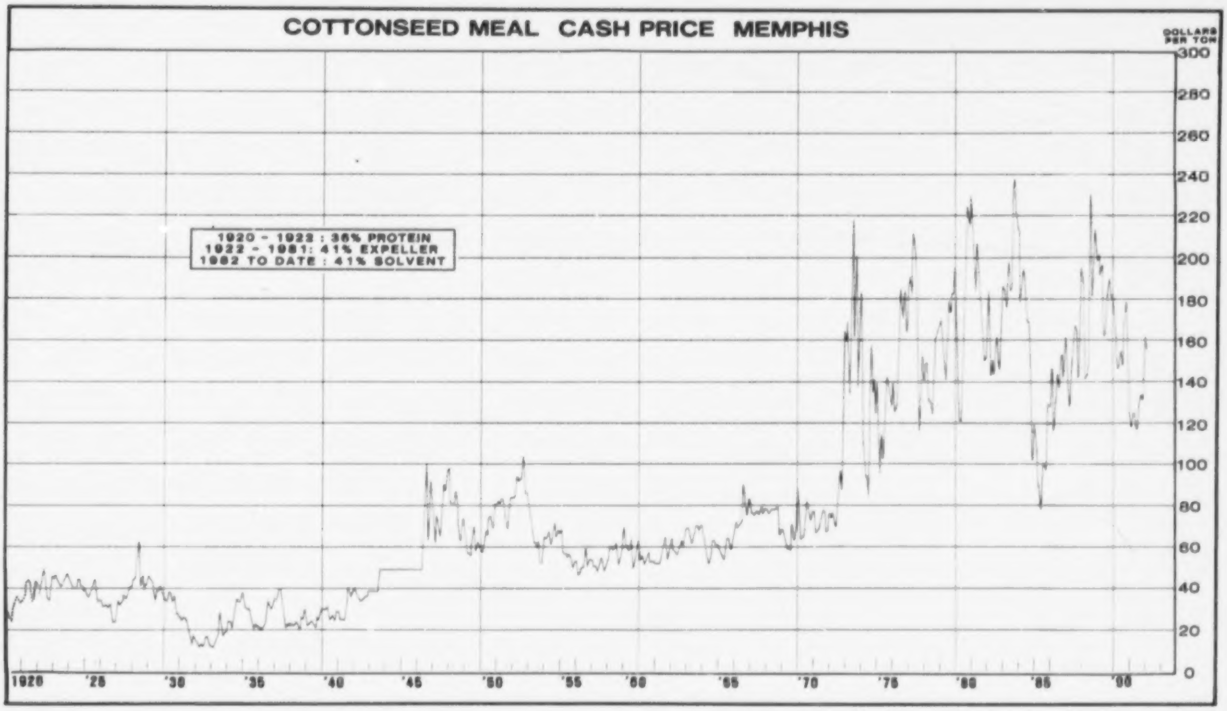
Yr. Begin. Aug. 1	Stocks	Production	Total Supply	Crush	Exports	Other	Total Disappearance	Farm Price $/Ton	Value of Production Mil. $	Products Produced: Oil Mil. Lbs.	Products Produced: Meal Ths. Sh. Tons	Products Produced: Linters Ths. Running Bales
	In Thousand Short Tons											
1983–4	371	3,076	3,447	2,583	50	698	3,331	166.0	511.5	777	1,134	699
1984–5	116	5,149	5,265	3,514	60	1,285	4,859	100.0	512.0	1,174	1,732	955
1985–6	406	5,279	5,685	3,417	9	1,912	5,338	66.0	347.6	1,070	1,526	936
1986–7	347	3,801	4,148	2,520	17	1,422	3,959	80.0	304.0	781	1,112	669
1987–8	189	5,769	5,958	3,396	50	2,153	5,599	83.0	474.7	1,204	1,647	868
1988–9	359	6,062	6,421	3,730	39	1,987	5,756	118.0	718.3	1,243	1,689	
1989–90[1]	665	4,677	5,342	2,974	46	1,957	4,977	105.0	492.7	1,039	1,327	
1990–1[1]	366	5,967	6,335	3,300	50	2,300	5,650	121.0	721.8	1,090	1,555	
1991–2[2]	685	6,814	7,500	3,900	75	2,475	6,450	75.0	511.0	1,285	1,775	

[1] Preliminary. [2] Forecast. *Source: Economic Research Service, U.S.D.A.*

Supply & Distribution of Cottonseed Oil in the United States In Millions of Pounds

Crop Year Beginning Oct.	Production	Imports for Consumption	Stocks Oct. 1	Total Supply	Disappearance: Exports	Disappearance: Domestic	Disappearance: Total	Per Capita Consump. of Salad & Ck. Oils – In Lbs. –	Utilization Food Uses: Shortening	Utilization Food Uses: Margarine	Utilization Food Uses: Salad & Cooking Oils	Utilization Food Uses: Other	Utilization Food Uses: Total	Prices: U.S.[3] (Crude) – $ Tonne –	Prices: Rott[4] (Cif) – $ Tonne –
1983	777	18	90	885	303	532	835	23.5	143	35	366	17	562	717	844
1984	1,174	—	50	1,224	433	684	1,117	19.8	156	N.A.	399	N.A.	607	643	763
1985–6	1,070	—	107	1,177	442	650	1,092	23.5	202	N.A.	373	N.A.	627	389	513
1986–7	781	11	85	877	214	573	787	24.1	135	36	408	14	494	390	491
1987–8	1,204	25	90	1,319	409	750	1,159	24.7	164	N.A.	579	N.A.	743	481	585
1988–9	1,243	0	160	1,403	406	850	1,256	24.8	191	N.A.	680		917	439	567
1989–90	1,039	0	147	1,199	354	765	1,119	23.8	235	27	507	33	801	514	650
1990–1[1]	1,090	0	80	1,175	250	835	1,085		210	12	330	16	587	492	614
1991–2[2]	1,285		90	1,380	325	925	1,250								

[1] Preliminary. [2] Estimate. [3] Valley Points FOB; Tank Cars. [4] Rotterdam; USPBY. *Source: Economic Research Service, U.S.D.A.* T.201


COTTONSEED MEAL CASH PRICE MEMPHIS

U.S. Consumption of Crude Cottonseed Oil in Refining[1] In Millions of Pounds

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1986–7	75.6	91.1	99.8	106.1	100.0	92.6	77.6	62.1	52.4	46.6	47.2	58.5	909.6
1987–8	74.4	113.4	124.4	122.1	121.8	136.7	120.2	122.8	106.5	112.5	86.9	63.0	1,305
1988–9	97.1	127.5	131.9	144.1	125.8	141.9	117.5	121.4	106.2	74.3	91.1	73.3	1,352
1989–90	87.5	121.1	121.6	133.7	103.4	114.2	83.8	79.1	68.0	53.3	62.2	56.5	1,084
1990–1[1]	——	272.0	——	——	253.9	——	——	263.3	——	——	227.7	——	1,017

[1] Preliminary. *Source: Bureau of the Census* T.206

U.S. Exports of Cottonseed Oil (Crude & Refined) In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1986	21.9	39.6	32.6	52.6	59.6	27.3	25.1	46.7	13.2	9.3	20.9	25.2	374.0
1987	7.1	14.1	27.5	10.5	25.0	27.0	9.6	12.2	25.8	17.1	32.9	32.8	241.6
1988	24.4	36.6	37.1	50.4	29.9	88.5	18.5	18.6	21.8	6.7	29.1	15.4	377.0
1989	47.2	41.0	49.9	11.8	16.6	14.1	38.7	63.6	72.3	49.1	17.0	40.1	461.4
1990	34.9	37.2	39.2	14.0	39.7	35.6	——	47.0	——	——	74.2	——	321.8
1991[1]	——	43.7	——	——	61.3	——	——	52.6	——				

[1] Preliminary. *Source: Dept. of Commerce* T.205

Average Wholesale Price of Cottonseed Meal (41% Solvent) at Memphis In Dollars Per Short Ton

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	146.25	128.75	115.60	129.25	133.75	132.50	137.00	150.60	152.50	141.90	157.50	160.50	140.51
1987	146.25	138.10	128.00	133.75	149.60	154.50	166.90	163.80	141.50	150.60	177.50	195.00	157.13
1988	187.50	160.00	141.00	143.10	147.50	230.00	223.75	181.00	205.00	212.50	293.00	199.40	193.6
1989	200.50	191.25	196.25	184.40	161.50	163.30	157.50	172.00	190.00	181.25	180.00	180.00	179.8
1990	160.00	150.00	146.25	150.00	155.00	147.50	161.50	169.50	178.75	163.00	147.50	141.25	155.85
1991	125.00	118.10	125.00	122.50	118.10	117.20	127.50	130.90	133.10	131.00	144.40	162.00	129.56
1992	156.25												

Source: Economic Research Service, U.S.D.A. T.196

COTTONSEED AND PRODUCTS

Cottonseed Crushed (Consumption) in the United States In Thousands of Short Tons

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1984–5	70.2	72.6	274.3	423.1	424.2	453.4	394.5	395.3	316.2	279.5	219.6	191.3	3,514
1985–6	194.6	197.0	338.0	411.4	368.8	431.5	361.0	349.8	281.3	213.8	154.5	115.3	3,417
1986–7	141.4	167.7	208.5	262.2	283.2	323.5	278.4	255.8	214.7	171.3	134.2	78.8	2,520
1987–8	71.4	137.7	251.8	344.2	363.2	373.4	352.2	340.1	310.7	312.5	275.5	263.6	3,396
1988–9	216.8	179.5	299.3	375.3	376.7	399.7	325.4	383.3	336.6	321.7	287.0	228.9	3,730
1989–90	218.6	150.6	275.4	335.9	332.4	344.7	280.3	254.6	245.5	201.5	191.9	130.9	2,927
1990–1[1]	157.3	176.1	—	935.1	—	—	973.0	—	—	864.5	—	—	3,106
1991–2[1]	864.5	—	—	821.0	—								

[1] Preliminary. *Source: Bureau of Census*

T.197

Production of Cottonseed Cake and Meal in the United States In Thousands of Short Tons

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1984–5	32.2	32.6	127.3	198.4	198.7	207.7	180.4	181.6	145.0	128.8	99.1	86.2	1,619
1985–6	87.9	90.7	153.1	187.6	169.4	199.1	166.4	159.1	128.6	97.5	71.5	51.9	1,563
1986–7	64.4	77.7	95.0	121.2	130.3	151.1	128.7	116.1	100.0	80.0	61.3	37.3	1,163
1987–8	32.2	58.3	121.7	156.9	169.3	169.4	160.2	155.7	144.0	144.0	124.7	120.6	1,557
1988–9	100.7	80.1	135.4	170.0	172.5	183.2	151.6	175.3	152.7	157.6	126.7	106.1	1,720
1989–90	98.5	69.3	126.1	154.9	152.6	157.1	130.6	116.6	111.9	90.7	86.6	56.6	1,330
1990–1[1]	68.7	77.4	—	437.1	—	—	456.2	—	—	409.1	—	—	1,449
1991–2[1]	392.6	—											

[1] Preliminary. *Source: Bureau of Census*

T.198

U.S. Production of Crude Cottonseed Oil In Millions of Pounds

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1984–5	21.7	21.6	84.3	132.5	132.5	141.5	124.3	123.3	96.3	87.0	67.7	62.9	1,096
1985–6	60.9	60.7	105.6	129.8	117.1	136.4	115.5	112.0	93.5	69.6	50.1	37.8	1,089
1986–7	48.0	54.5	64.5	83.5	91.4	103.7	90.3	83.3	70.6	55.6	43.5	25.4	814
1987–8	22.6	46.9	84.0	118.2	124.8	125.7	115.8	113.2	104.4	105.8	91.2	91.0	1,144
1988–9	72.7	56.9	98.6	125.3	125.0	129.3	106.0	127.1	111.7	109.7	94.5	76.6	1,233
1989–90	81.9	56.8	97.6	115.3	117.4	118.4	98.2	89.4	88.8	74.7	75.4	48.0	1,062
1990–1[1]	58.7	57.6	—	297.3	—	—	309.9	—	—	278.0	—	—	1,002
1991–2[1]	266.2	—											

[1] Preliminary. *Source: Bureau of Census*

T.199

United States Production of Refined Cottonseed Oil In Millions of Pounds

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1984–5	25.7	27.8	64.5	121.4	117.6	135.8	122.2	101.9	93.3	95.4	74.6	68.2	1,043
1985–6	55.9	57.0	87.5	117.1	112.0	119.3	109.3	112.9	95.0	63.7	54.9	42.4	1,027
1986–7	60.3	51.2	73.5	90.9	97.6	103.7	96.8	90.3	74.9	59.8	51.0	45.5	896
1987–8	45.8	56.9	71.5	110.3	120.9	119.9	117.8	132.6	116.5	119.2	103.3	109.6	1,224
1988–9	83.2	61.7	94.1	124.8	127.8	139.7	121.9	137.0	116.3	119.1	102.8	71.6	1,300
1989–90	86.6	69.1	79.8	111.8	111.6	122.3	94.4	109.7	80.4	74.8	65.0	50.8	1,054
1990–1[1]	57.8	53.7	90.7	110.8	110.4	—	242.2	—	—	253.5	—	—	919
1991–2[1]	221.8	—											

[1] Preliminary. *Source: Bureau of Census*

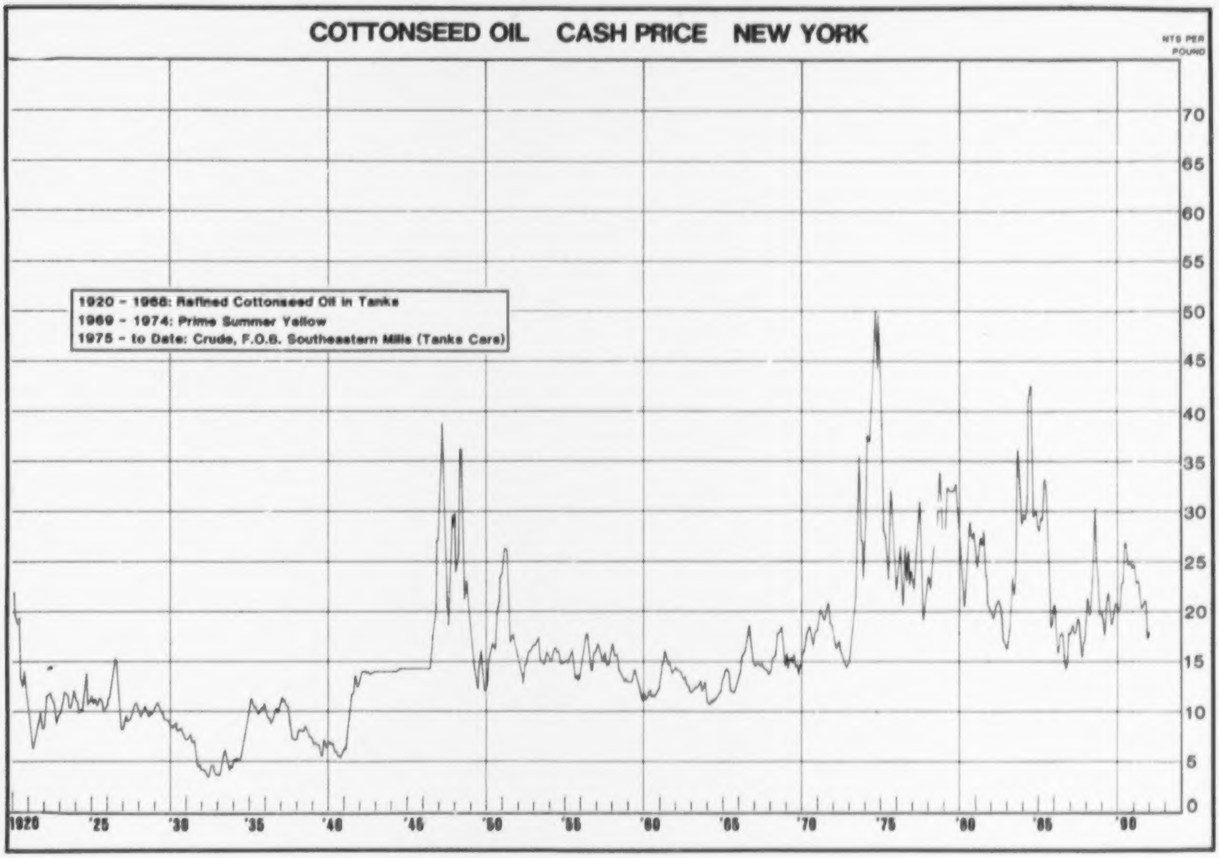
T.202

U.S. Stocks of Cottonseed Oil (Crude & Refined) at End of Month In Millions of Pounds

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1984–5	61.2	49.8	57.6	74.6	79.4	89.6	98.6	114.2	114.7	107.7	105.8	124.4
1985–6	131.2	106.9	106.2	127.9	130.2	162.0	184.1	197.7	179.7	168.0	154.5	110.4
1986–7	90.4	84.9	77.0	101.1	130.6	165.4	188.1	207.5	204.2	236.2	190.8	165.9
1987–8	127.3	90.2	107.2	136.1	169.8	210.0	197.6	184.7	177.2	197.8	175.6	176.0
1988–9	172.9	160.4	163.9	188.6	206.1	266.3	274.0	276.6	263.7	249.2	266.7	247.6
1989—90	191.4	147.3	138.3	163.2	189.6	186.8	180.9	174.8	168.8	156.1	135.6	111.8
1990–1[1]	75.9	80.4	—	—	102.7	—	—	146.8	—	—	124.6	—
1991–2[1]	—	136.3										

[1] Preliminary. *Source: Bureau of Census*

T.203



Average Price of Crude Cottonseed Oil, F.O.B. Southeastern Mills (Tank Cars) In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	29.8	29.1	30.1	31.4	41.1	42.6	36.3	32.7	31.0	30.6	31.0	29.3	32.9
1985	27.4	30.1	30.2	32.3	33.3	32.6	29.1	23.8	20.7	18.3	18.9	20.6	26.4
1986	19.9	17.6	15.8	17.5	17.7	17.9	17.6	15.1	14.3	15.4	17.4	17.7	17.0
1987	18.38	18.56	17.85	17.88	18.94	19.25	19.00	16.70	15.44	16.75	17.00	18.35	17.84
1988	21.31	20.19	19.60	21.00	22.88	26.65	30.25	15.00	23.00	21.44	19.70	19.94	22.58
1989	19.19	17.56	20.25	21.06	21.80	20.25	19.63	18.60	19.75	19.95	20.81	20.50	19.95
1990	19.95	20.19	22.88	22.83	26.90	26.94	26.00	24.60	24.88	24.80	24.19	24.75	24.07
1991	23.67	22.88	23.00	22.25	21.00	20.31	20.50	21.00	19.88	17.83	17.42	18.00	

Source: Economic Research Service, U.S.D.A. T.204

U.S. Exports of Cottonseed Oil to Important Countries In Thousands of Metric Tons

Yr. Beg. Oct. 1	Canada	Costa Rica	Dom. Rep.	Egypt	W. Germany	Guatemala	India	Salvador	Japan	Rep. of Korea	Netherlands	South Africa	Mexico	United Kingdom	Venezuela	Total
1983–4	3.5	0	4.5	31.2	7.9	1.1	—	5.3	16.7	2.9	2.1	1.8	.2	3.0	55.4	137.4
1984–5	3.3	1.0	3.9	55.9	—	9.8	—	15.6	22.8	1.8	5.8	2.0	.1	1.5	70.0	196.2
1985–6	2.7	—	5.9	37.8	4.9	11.1	—	29.7	26.3	4.5	8.0	1.6	9.5	.5	48.6	200.7
1986–7	2.9	—	1.9	0	.1	2.2	—	10.9	17.9	5.8	5.0	.5	3.1	0	44.6	97.7
1987–8	4.6	—	6.3	31.5	.1	1.2	—	31.0	21.6	11.5	1.6	0	7.3	—	51.3	185.3
1988–9	5.6	—	6.0	32.9	.1	5.5	—	22.6	29.4	20.4	4.2	.1	2.8	—	55.0	184.4
1989–90	6.2		11.1	6.5	—	.5		25.9	39.6	30.5	3.2	0	2.4	0	20.6	146.8
1990–91[1]	6.4		0	21.0	—	.4		12.4	27.7	17.2	5.0	0	3.6	0	3.7	95.7

[1] Preliminary. *Source: U.S. Bureau of the Census* T.202A

CRB Futures Index

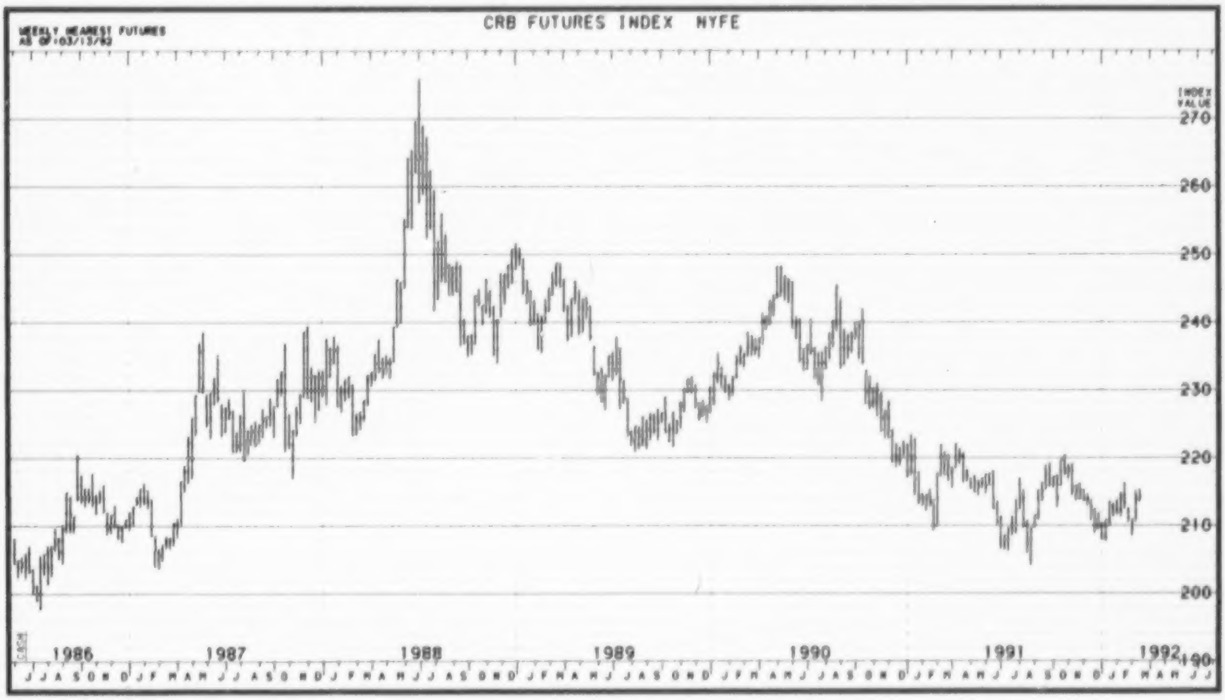
The CRB Futures Index, comprised of prices in 21 futures markets, is a gauge of expectations about commodity prices down the road. The index, which is reported on a base of 1967=100 percent, ended 1991 at 208.08, down 6.5 percent on the year.

The livestock group, dropping 23 percent on the year, weighed heavily on the index, as did sharp declines in the oilseeds, industrials, and precious metals. The softs fell slightly in 1991, while the grains and miscellaneous groups were the only ones that gained. (See the discussion in *The Commodity Price Trend* on page 6T.)

Prices of futures on the CRB Index closely tracked the underlying index throughout the year. The contract began trading on the New York Futures Exchange (NYFE) in 1986. The CRB Index futures contract has made it possible to trade broad commodity price moves with a single position.

Futures Market

Futures and options on the CRB Futures Index are traded on the NYFE.



Average Open Interest of CRB Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1988	2,597	2,607	2,682	2,819	3,592	3,934	2,846	2,795	2,659	2,419	2,529	2,556
1989	2,679	3,008	2,491	2,274	2,117	2,104	1,891	1,992	1,861	1,907	2,215	2,209
1990	1,889	1,229	1,476	1,858	1,499	1,459	1,289	1,286	1,181	1,247	1,505	1,530
1991	1,443	1,593	1,524	1,620	1,511	1,524	1,168	1,071	1,045	1,172	1,357	1,383

Source: N.Y. Futures Exchange

Volume of Trading of CRB Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1988	9,557	10,726	13,841	9,480	20,299	43,591	31,043	22,020	15,615	9,044	9,691	11,044	205,951
1989	8,805	10,045	12,035	11,437	13,145	13,824	11,917	9,846	7,918	7,412	9,613	8,551	124,548
1990	6,505	5,829	7,042	6,670	7,191	6,687	6,477	6,415	4,096	4,744	4,409	3,842	69,907
1991	5,835	5,391	6,715	6,432	3,671	5,557	4,853	5,876	4,414	3,766	4,132	4,717	61,359

Source: N.Y. Futures Exchange

Currencies

The dollar set several all-time lows against other currencies during 1991, reflecting the effects of the U.S. recession and falling interest rates and the higher interest rates needed to fight inflation in Germany and Japan. Nevertheless, the U.S. Dollar Index on FINEX (the Financial Instrument Exchange Division of the New York Cotton Exchange) ended 1991 at 83.65, up slightly from its year-earlier close at 83.07.

The FINEX Dollar Index mirrors the Federal Reserve Board's Trade-Weighted Dollar Index. The ten currencies and their percentages in each index are: Deutsche mark, 20.8; yen, 13.6; French franc, 13.1; pound sterling, 11.9; Canadian dollar, 9.1; lira, 9.0; Dutch guilder, 8.3; Belgian franc, 6.4; Swedish krona, 4.2; and Swiss franc, 3.6.

The dollar began 1991 on a firm note, but the start of the Gulf War on January 16 sent the greenback into a decline. The offensive against Iraq went so smoothly that funds that had sought safe havens in dollar-denominated assets left to seek higher interest rates overseas. Germany's Bundesbank raised its discount and Lombard rates, effective February 1, and that day the Federal Reserve discount rate was reduced 50 basis points to 6 percent.

The dollar set an all-time low of 1.4430 Deutsche marks on February 11 (69.30 cents in American terms), despite occasional central bank intervention. Expectations that U.S. economic weakness would be addressed by further interest-rate cuts--as indeed happened through the year--contributed to the pressure. The dollar ended February 11 at 127.20 yen, more than 6 percent below its close on January 15, the day before Operation Desert Storm began.

However, the dollar rallied in mid-February on concerted central-bank intervention. By March, slowing economies had forced interest-rate cuts in the U.K., the Netherlands and Spain. Also, on March 6, the upper house of the Japanese Diet approved a 1.17-trillion-yen contribution to pay the costs of Desert Storm, and prospects that the yen shortly would be converted to dollars also firmed the greenback. The positive sentiment faded by April, when it became clear that the euphoria following the end of the Gulf War would not be translated into an economic boom.

The Gulf War transfer payments played a significant role in reducing the U.S. current account deficit in 1991. And there were improvements in the U.S. trade balance. Oil import prices were lower, and exports increased. The U.S. was the world's leading exporting nation in 1991. Japan maintained a current account surplus, while the high costs of unification put the German current account into deficit.

Japan's Liberal Democrats replaced Prime Minister Kaifu on October 27. He was popular with the voters, but not with the power cliques in the LDP, who installed Kiichi Miyazawa in his place. He was immediately embroiled in a series of political scandals and an increasingly bitter confrontation over trade with the U.S. The yen held up and rallied, ending the year at an all-time high against the dollar of 124.85 yen (0.8010 in American terms).

On December 19 and 20, it was deja vu all over again when the Bundesbank raised its discount rate 50 basis points to 8 percent, and the Fed responded by cutting its rate by 100 basis points to 3.5 percent, a level last seen in November 1964.

Futures Markets

The FINEX Division of the New York Cotton Exchange trades Dollar Index and European currency unit futures and options on those futures virtually around the clock. The trading day begins at 7:00 p.m., recesses at 10:00 p.m. (when Tokyo traders break for lunch) and then runs from 11:30 p.m. to 3:00 p.m. the following day. During overnight trading, bid-asked spreads are provided through a designated market-maker system.

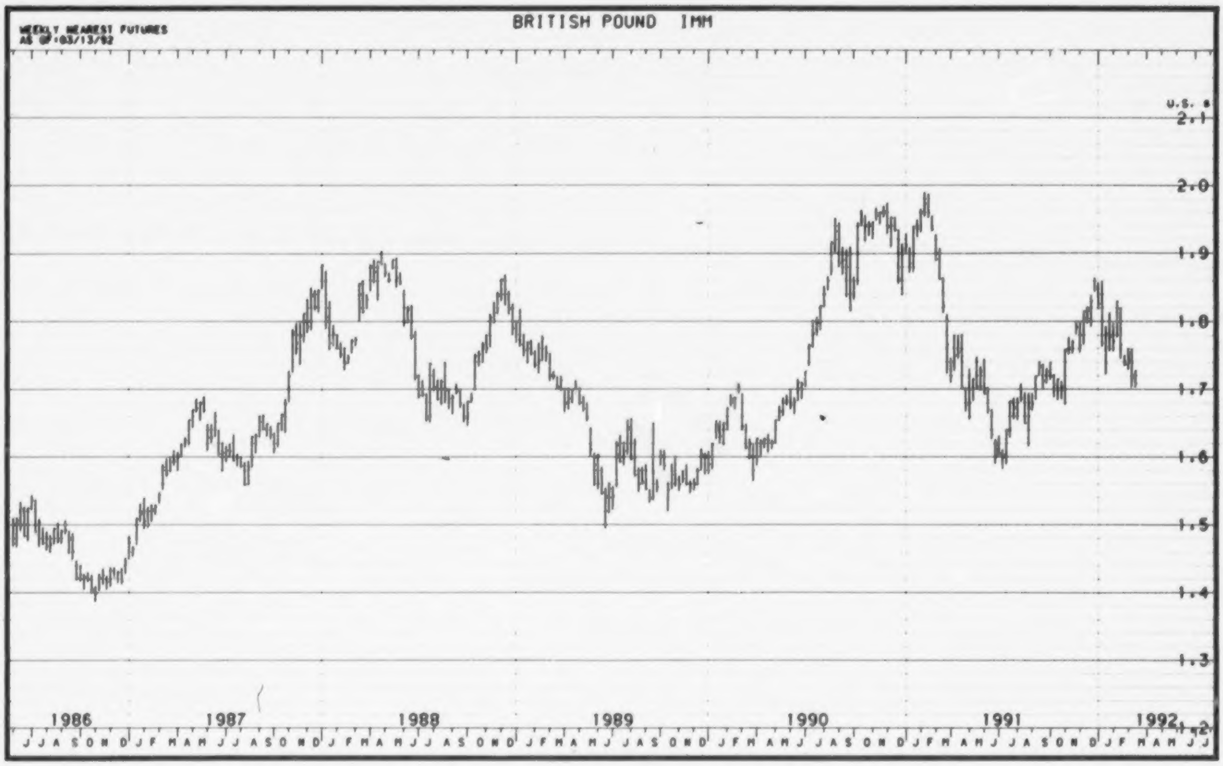
The Chicago Mercantile Exchange's International Monetary Market trades futures and options on the British pound, Swiss franc, D-mark, yen, and the Australian and Canadian Dollars. The IMM also trades three cross-rate futures contracts: British pound/D-mark, D-mark/yen, and D-mark/Swiss franc. Also, in early 1992, the IMM began trading D-mark futures and options settled in yen. Cash currency options and cross rates are traded on the Philadelphia Stock Exchange.

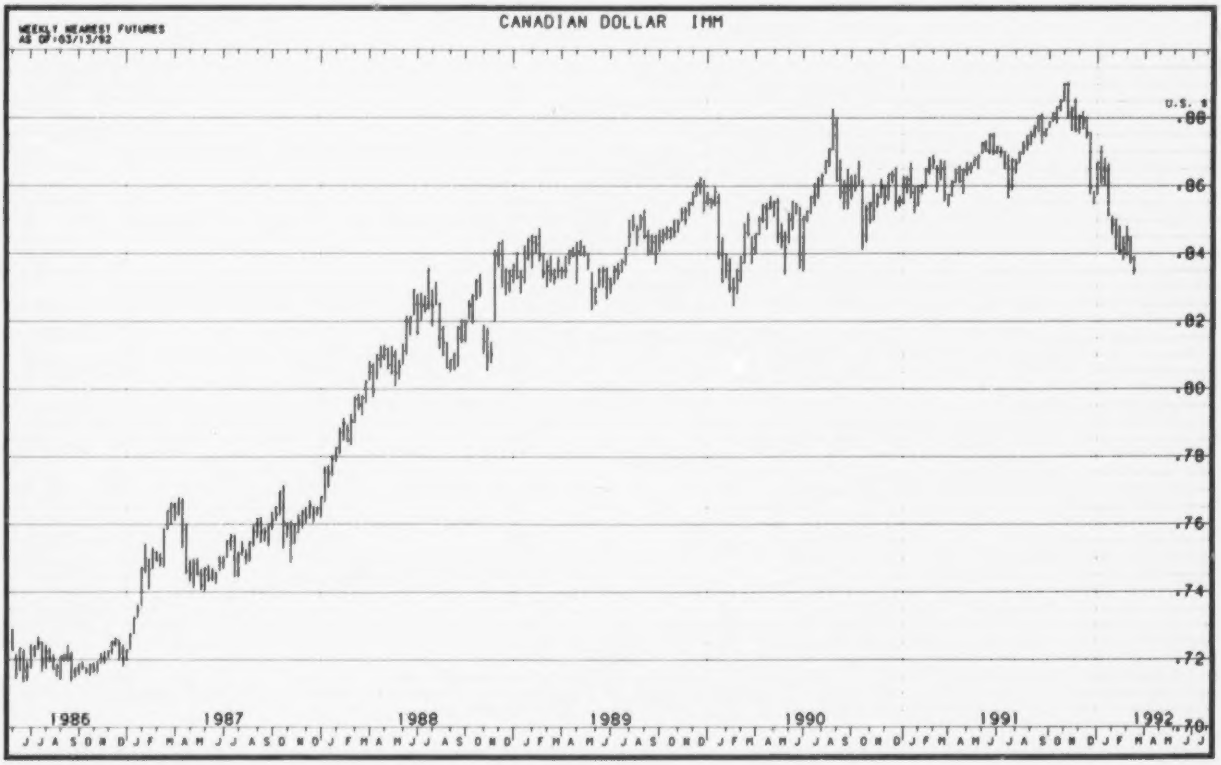
Monthly Close of the CRB Currency Futures Index 1977 = 100

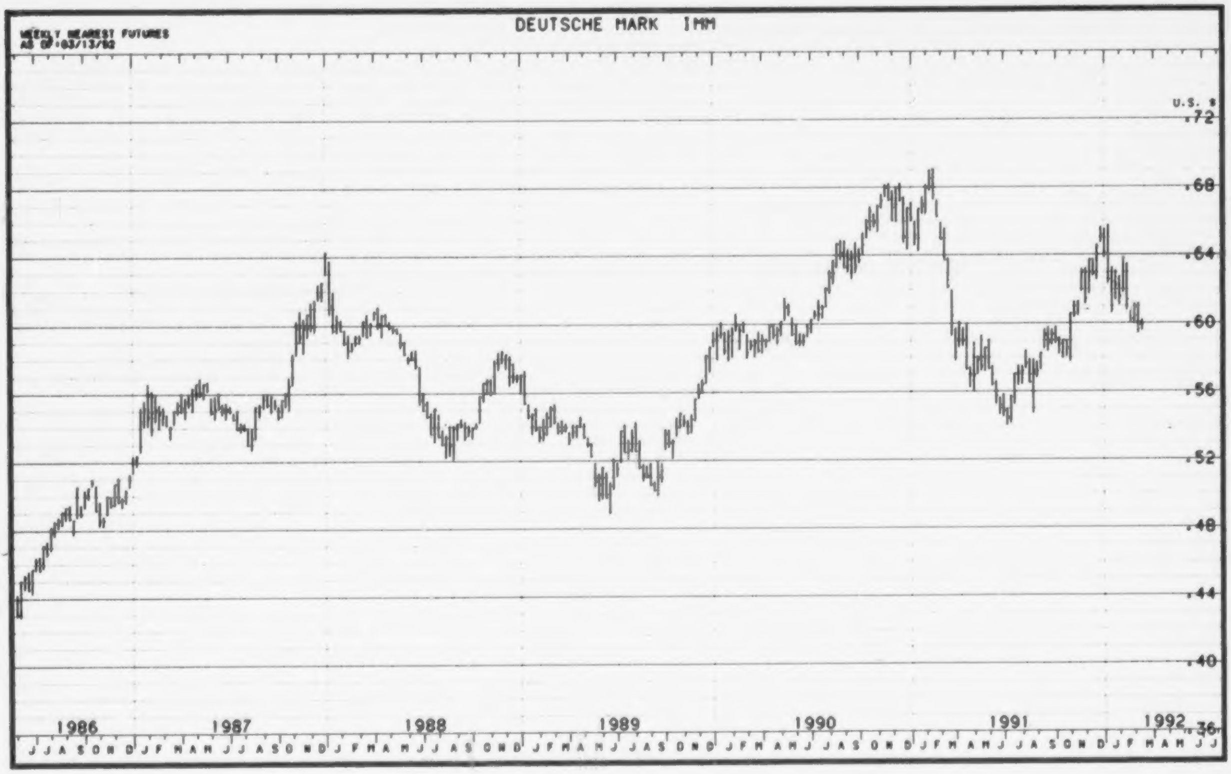
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	99.4	98.8	98.8	99.8	99.0	98.5	96.8	95.7	97.4	97.1	96.3	96.2
1984	93.9	97.1	97.7	95.1	94.1	92.2	88.8	89.8	86.2	86.5	84.3	83.1
1985	81.6	78.0	84.2	83.4	84.8	85.5	91.4	90.3	93.9	95.9	98.7	98.8
1986	99.5	103.9	103.3	108.5	104.3	109.6	112.4	113.2	112.3	109.2	112.0	114.4
1987	118.5	119.5	123.3	125.7	123.4	122.9	120.6	123.8	122.6	128.7	134.8	141.3
1988	134.0	133.6	138.3	137.0	134.5	129.2	127.1	125.1	126.7	131.3	136.3	133.7
1989	128.2	130.0	126.0	125.5	119.3	120.2	125.2	119.7	123.6	122.6	123.9	126.1
1990	127.3	126.3	124.9	125.8	127.5	129.1	134.8	136.6	137.4	141.5	141.8	140.8
1991	142.8	139.8	129.3	130.6	129.0	125.5	128.0	128.3	132.4	132.5	134.5	138.8
1992												

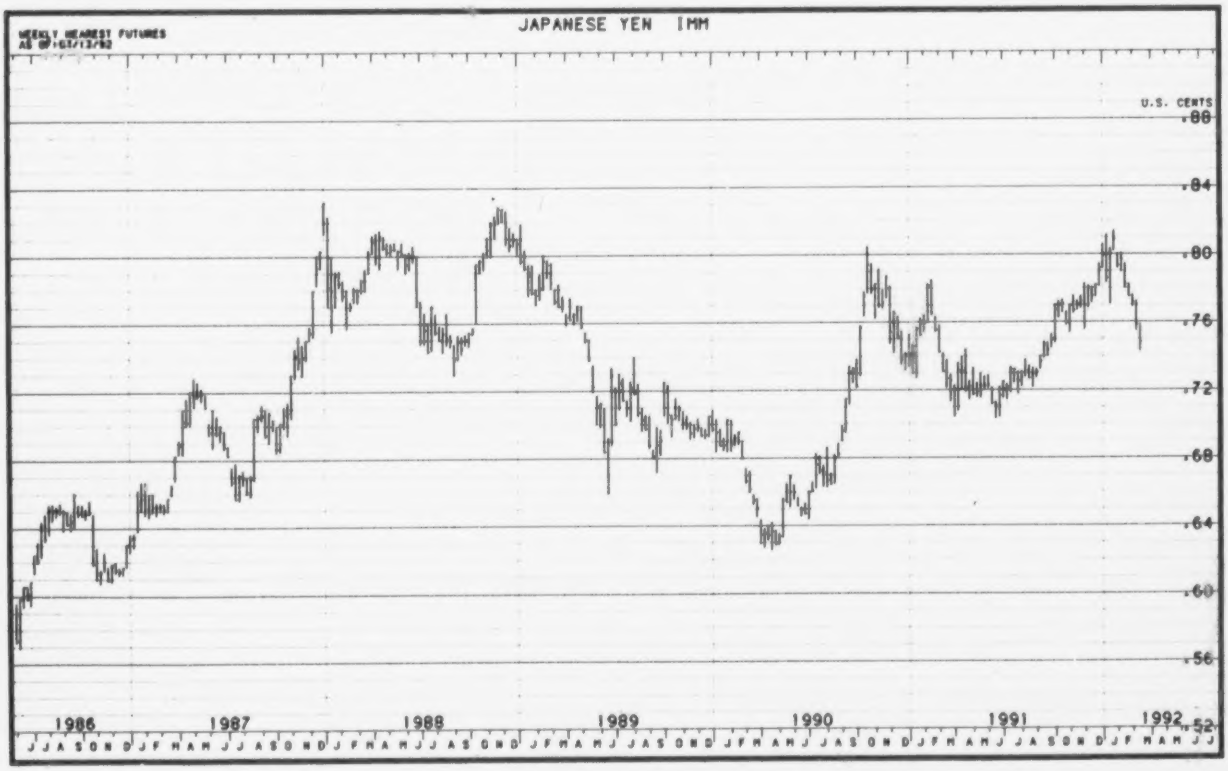
Source: Commodity Research Bureau.

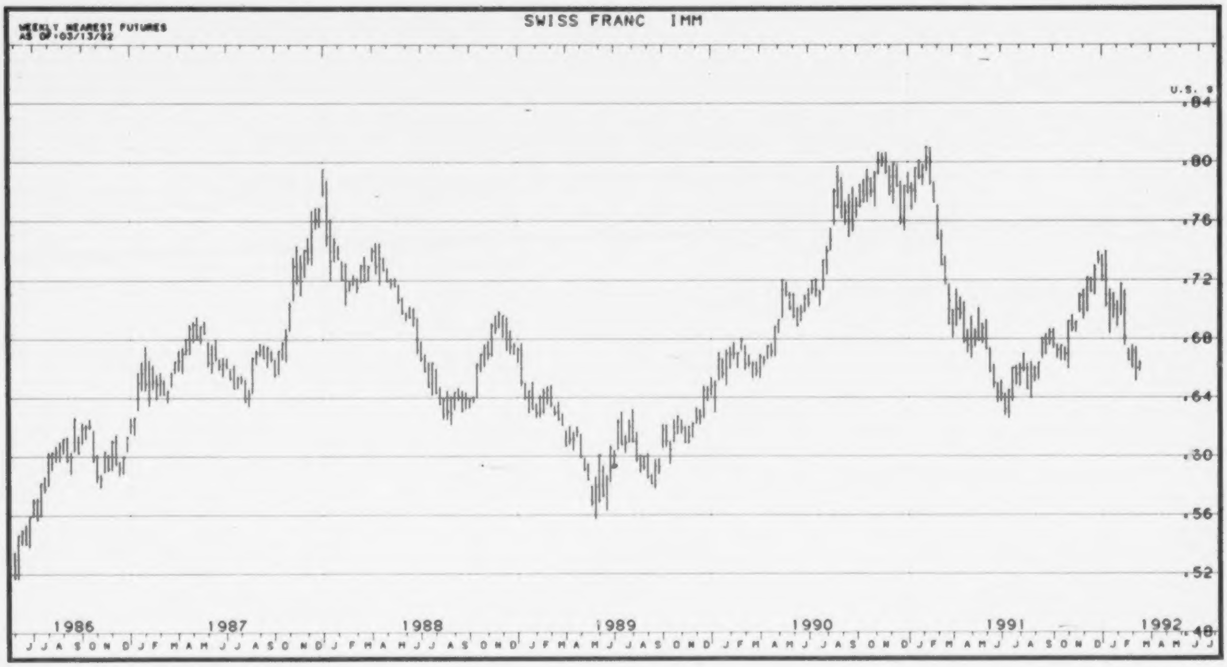
CURRENCIES


WEEKLY NEAREST FUTURES
AS OF:03/13/92
BRITISH POUND IMM
U.S. $
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY NEAREST FUTURES
AS OF:03/13/92
CANADIAN DOLLAR IMM
U.S. $
.88
.86
.84
.82
.80
.78
.76
.74
.72
.70
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY NEAREST FUTURES
AS OF:03/13/92
DEUTSCHE MARK IMM
U.S. $
.72
.68
.64
.60
.56
.52
.48
.44
.40
.36
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY NEAREST FUTURES
AS OF:03/13/92
JAPANESE YEN IMM
U.S. CENTS
.88
.84
.80
.76
.72
.68
.64
.60
.56
.52
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J



Canadian Dollars per U.S. Dollar

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	1.407	1.404	1.400	1.387	1.375	1.389	1.380	1.388	1.387	1.388	1.387	1.379	1.389
1987	1.360	1.334	1.319	1.319	1.341	1.338	1.326	1.325	1.315	1.309	1.316	1.307	1.326
1988	1.284	1.268	1.249	1.235	1.237	1.217	1.208	1.224	1.227	1.206	1.218	1.196	1.230
1989	1.191	1.189	1.195	1.189	1.193	1.199	1.189	1.176	1.192	1.202	1.169	1.161	1.187
1990	1.172	1.197	1.180	1.168	1.170	1.170	1.160	1.150	1.160	1.160	1.164	1.160	1.167
1991	1.156	1.155	1.157	1.154	1.150	1.144	1.124	1.145					

Source: Economic Research Service, U.S.D.A. T.0581

German Marks per U.S. Dollar

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	2.437	2.330	2.276	2.268	2.226	2.232	2.148	2.060	2.040	2.005	2.023	1.988	2.169
1987	1.858	1.823	1.834	1.810	1.787	1.819	1.848	1.855	1.812	1.798	1.682	1.634	1.797
1988	1.654	1.697	1.676	1.671	1.693	1.757	1.846	1.888	1.867	1.817	1.748	1.756	1.755
1989	1.836	1.851	1.869	1.869	1.946	1.979	1.889	1.927	1.949	1.866	1.766	1.736	1.874
1990	1.692	1.677	1.704	1.688	1.660	1.680	1.640	1.570	1.570	1.540	1.486	1.498	1.615
1991	1.509	1.481	1.612	1.703	1.718	1.782	1.783	1.743					

Source: Economic Research Service, U.S.D.A. T.0582

Japanese Yen per U.S. Dollar

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	199.8	184.8	178.6	174.7	166.9	167.4	158.1	154.1	154.6	156.4	162.8	162.2	168.4
1987	154.7	153.3	151.3	142.8	140.4	144.5	150.3	147.3	143.2	143.1	135.4	128.3	144.6
1988	127.6	129.1	127.0	124.9	124.7	127.4	133.0	133.8	134.3	128.7	123.2	123.6	128.1
1989	127.4	127.7	130.6	132.0	137.9	144.0	140.4	141.4	144.9	141.4	143.4	143.7	137.9
1990	145.0	145.7	153.2	158.4	156.2	153.8	149.0	147.4	138.5	129.6	128.2	133.9	144.9
1991	133.7	130.5	137.4	137.1	138.0	139.6	137.6	136.9					

Source: Economic Research Service, U.S.D.A. T.0583

British Pound Per U.S. Dollar

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	.7014	.6999	.6809	.6671	.6564	.6625	.6631	.6726	.6809	.7006	.7017	.6945	.6818
1987	.6641	.6541	.6278	.6128	.6000	.6139	.6213	.6249	.6077	.6007	.5634	.5471	.6115
1988	.5553	.5689	.5453	.5325	.5346	.5628	.5862	.5889	.5938	.5751	.5528	.5477	.5619
1989	.5368	.5703	.5836	.5880	.6132	.6439	.6142	.6271	.6358	.6443	.6356	.6247	.6098
1990	.6054	.5898	.6155	.6100	.6000	.6300	.5500	.5300	.5300	.5140	.5091	.5203	.5670
1991	.5169	.5091	.5490	.5715	.5799	.6059	.6048	.5939					

Source: International Monetary Market (Chicago)

Average Open Interest of British Pound Futures in Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	32,125	41,716	35,588	33,259	33,737	27,316	28,805	29,969	33,536	37,910	33,332	25,696
1987	27,535	30,539	44,786	39,453	44,235	39,266	36,803	42,365	36,672	37,032	43,073	36,700
1988	29,433	40,278	41,665	43,291	45,745	29,892	18,052	18,917	18,149	17,930	21,850	23,829
1989	22,870	24,705	27,436	21,170	25,871	26,512	22,899	22,559	27,661	21,971	24,850	26,124
1990	23,272	30,729	26,219	23,909	33,355	35,528	37,898	41,820	33,458	32,213	39,623	32,790
1991	23,686	34,680	33,558	29,900	30,697	33,792	26,443	21,578	28,215	22,882	31,595	27,233

Average Open Interest of Canadian Dollar Futures in Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	15,690	14,799	12,940	11,768	14,533	11,188	11,563	16,083	13,168	11,173	14,131	16,213
1987	16,546	24,662	28,830	26,584	25,050	22,193	22,005	19,876	22,244	21,292	18,744	16,504
1988	22,411	24,244	22,965	24,095	27,747	35,787	33,207	28,513	22,645	23,138	19,548	24,844
1989	24,221	27,726	23,102	21,146	24,900	24,807	20,007	31,041	27,206	25,903	29,645	29,116
1990	26,426	29,204	23,848	24,048	33,823	30,809	39,843	42,092	34,998	29,434	31,250	25,272
1991	29,072	28,214	25,550	24,894	29,310	33,136	25,113	25,310	30,909	28,805	27,453	22,311

Average Open Interest of Deutschemark Futures in Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	52,278	63,742	62,828	57,514	56,580	41,965	47,942	53,932	49,927	54,119	50,391	48,222
1987	55,518	57,619	47,105	44,425	54,018	42,127	37,790	47,875	39,754	36,319	52,866	48,644
1988	32,849	45,974	42,134	37,759	53,511	60,575	48,574	60,803	48,777	46,456	53,695	46,461
1989	51,439	65,251	52,869	52,693	70,062	72,766	62,365	66,520	65,666	70,976	91,393	93,491
1990	63,745	73,216	72,357	63,058	70,475	65,113	64,765	72,684	58,241	61,839	76,650	67,322
1991	51,211	73,463	72,824	71,737	79,162	80,318	68,046	73,860	70,525	59,236	85,248	77,632

Average Open Interest of Japanese Yen Futures in Chicago In Contracts

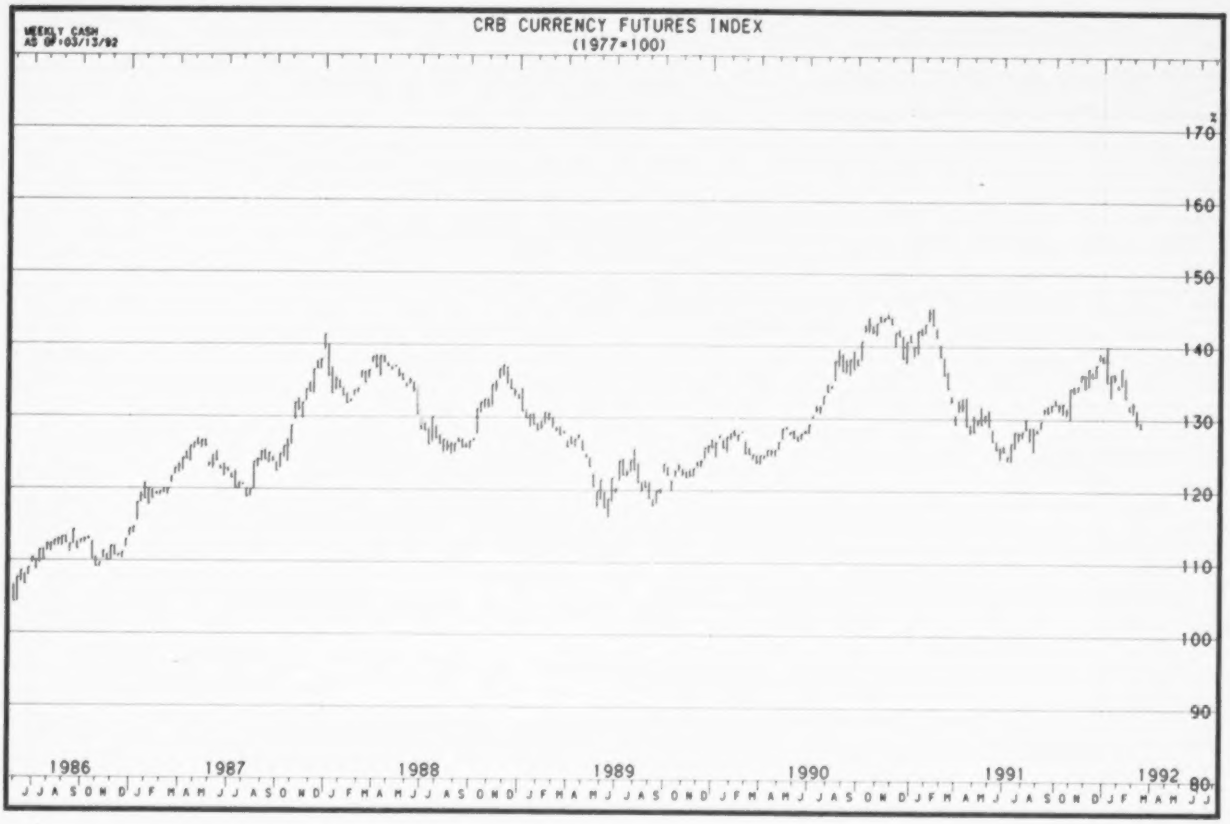
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	27,017	34,597	37,098	33,228	40,723	34,143	47,987	45,119	40,174	35,781	42,359	32,156
1987	31,056	31,040	35,526	47,220	47,151	36,330	35,526	41,918	49,034	42,477	54,093	51,804
1988	48,680	54,426	54,728	45,399	49,150	45,113	49,300	51,337	49,228	45,162	54,522	47,509
1989	39,467	48,400	53,654	52,013	67,213	73,355	48,261	60,235	71,230	50,594	60,283	57,748
1990	60,012	67,723	82,783	71,709	79,850	62,252	62,760	65,050	77,686	74,890	77,115	65,365
1991	43,552	64,694	57,115	49,060	52,964	55,727	53,045	56,496	66,174	74,353	74,585	64,219

Average Open Interest of Swiss Franc Futures in Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	27,971	33,969	32,182	31,225	31,888	26,285	33,699	38,271	34,813	31,620	32,357	26,856
1987	30,600	35,576	30,208	31,226	34,140	28,592	27,380	30,406	28,379	25,998	36,015	31,866
1988	25,852	32,781	26,245	25,640	36,244	33,748	28,750	33,839	29,886	25,733	37,820	29,276
1989	27,442	31,287	34,749	34,074	42,256	36,445	35,625	41,613	38,429	31,432	39,757	47,927
1990	36,339	42,435	34,953	32,853	45,464	42,862	39,769	48,544	40,269	37,216	44,166	37,220
1991	31,489	36,483	49,061	40,026	38,601	43,476	36,031	35,881	29,833	24,949	32,342	32,439

Source: International Monetary Market (Chicago)

CURRENCIES



United States Merchandise Trade Balance In Millions of Dollars

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	-11,408	- 8,095	- 8,960	-10,588	-10,387	-12,068	-10,447	- 9,846	-14,559	-10,561	-12,267	-13,311	-126,461
1986	-12,166	- 9,027	- 9,961	-11,618	-10,706	-10,212	-13,056	-12,157	-13,144	-12,470	-13,140	-10,623	-138,279
1987	-13,453	-10,956	-10,628	-11,613	-12,410	-13,721	-14,431	-13,747	-12,484	-15,298	-11,932	-11,445	-152,119
1988	- 9,874	-11,179	- 7,656	- 8,233	- 7,915	-11,738	-10,211	-11,006	- 9,237	-10,251	-10,824	-10,402	-118,526
1989	- 8,639	- 8,622	- 6,954	- 7,191	- 9,463	- 8,724	-10,582	-11,034	- 8,971	-11,780	-10,754	- 6,687	-109,399
1990[1]	- 9,640	- 6,150	- 6,369	- 6,527	- 7,308	- 6,476	-10,759	-10,509	- 9,157	-12,805	-10,529	- 6,211	-101,718
1991[1]	- 7,017	- 4,333	- 1,873	- 3,419	- 3,986	- 3,861	- 7,776	- 7,440	- 6,997	- 9,006			

[1] Preliminary. *Source: Bureau of the Census*

Index of Real Trade-Weighted Dollar Exchange Rates for Total Agriculture[2] 1985 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1988 U.S. Markets	76.4	76.8	75.8	74.8	74.9	76.0	77.8	78.3	79.3	77.8	75.7	75.6
U.S. Competitors	83.1	83.4	82.6	81.9	81.8	82.2	83.2	84.2	84.4	83.5	82.1	81.9
1989 U.S. Markets	77.2	77.5	79.4	79.1	81.0	82.1	79.5	80.6	81.4	79.5	79.5	78.5
U.S. Competitors	82.1	81.4	81.9	85.0	88.7	88.7	86.8	85.7	85.2	83.7	82.4	83.9
1990[3] U.S. Markets	78.3	78.1	79.3	79.4	78.5	78.9	79.2	79.1	78.5	76.6	74.7	75.3
U.S. Competitors	80.1	81.2	79.6	79.2	77.8	77.5	76.4	76.1	76.3	75.0	75.3	73.5
1991 U.S. Markets	75.8	75.0	78.4	79.4	79.7	80.9	80.6	79.8	78.4	78.1	77.9	
U.S. Competitors	75.3	75.1	76.4	77.1	77.4	77.9	77.7	76.8	75.9	76.2	76.3	

[1] Preliminary. [2] Real indexes adjust nominal exchange rates for differences in rates of inflation, to avoid the distortion caused by high-inflation countries. A higher value means the dollar has appreciated. Federal Reserve Board Index of trade-weighted value of the U.S. dollar against 10 major currencies. Weights are based on relative importance in world financial markets. [3] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.0589

Diamonds

World Production of Natural Gem Diamonds In Thousands of Carats

Year	Angola	Australia	Botswana	Brazil	Cent. Afr. Rep.	China	Ghana	Guinea	Namibia	Sierra Leone	South Africa	Tanzania	USSR	Zaire	Total
1984	652	3,415	5,810	200	236	200	35	44	884	240	4,516	193	4,300	5,169	26,093
1985	464	4,242	6,318	233	190	200	60	123	865	243	4,550	165	4,400	4,032	26,233
1986	240	13,145	9,590	310	259	200	88	190	970	215	4,473	133	7,400	4,661	42,038
1987	180	13,650	9,368	300	304	200	65	163	971	150	4,063	105	7,400	3,885	41,042
1988	950	17,413	10,660	353	284	200	155	136	901	12	3,817	105	7,500	2,724	45,402
1989[1]	1,165	17,540	10,676	350	334	200	124	138	910	90	4,010	105	7,500	2,663	45,992
1990[2]	1,200	17,331	12,146	350	300	200	129	130	735	100	3,826	105	7,500	2,700	47,000
1991[2]	1,500	17,200	13,000	350	300	200	120	130	900	100	3,800	105	7,500	2,700	48,000

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines*

World Production of Natural Industrial Diamonds In Thousands of Carats

Year	Angola	Australia	Botswana	Brazil	Cent. Afr. Rep.	China	Ghana	Liberia	Sierra Leone	South Africa	Tanzania	USSR	Venezuela	Zaire	Total
1984	250	2,277	7,104	550	101	800	311	132	105	5,627	84	6,400	232	13,290	37,359
1985	250	2,828	6,317	217	87	800	576	72	106	5,652	71	6,400	180	16,127	39,785
1986	10	16,066	3,500	315	99	800	498	189	100	5,755	57	7,400	165	18,643	53,702
1987	10	16,683	3,840	200	108	800	400	183	75	4,990	45	7,400	68	15,540	50,472
1988	50	17,413	4,569	180	59	800	465	100	6	4,687	45	7,500	74	15,439	51,494
1989[1]	80	17,540	4,576	150	81	800	370	93	39	5,106	45	7,500	185	15,092	51,751
1990[2]	80	17,331	5,206	150	80	800	386	60	50	4,868	45	7,500	245	15,300	52,175
1991[2]		17,200	5,200	150		800				4,500		7,500		15,300	51,650

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines*

World Production of Synthetic Diamonds In Thousands of Carats

Year	China	Czechoslovakia	France	Greece	Ireland	Japan	Romania	South Africa	Sweden	USSR	United States	Yugoslavia	Total
1988	15,000	5,000	4,000	1,000	60,000	25,000	5,000	55,000	25,000	41,500	W	5,000	241,500
1989[1]	15,000	5,000	4,000	1,000	60,000	25,000	4,500	60,000	25,000	41,500	W	5,000	246,000
1990[2]	15,000	5,000	4,000	1,000	60,000	25,000	4,500	60,000	25,000	41,000	W	5,000	245,500
1991													

[1] Preliminary. [2] Estimate. [W] Withheld—Proprietary Data. *Source: Bureau of Mines*

U.S. Salient Statistics of Industrial Diamonds In Millions of Carats

Year	Bort, Grit & Powder & Dust Natural and Synthetic								Stones (Natural)						
	Production														
	Mfg. Diamond	Secondary	Imports For Consumption	Exports & Reexports	In Mfg. Pdt's.	Govt. Sales	Apparent Consumption	Price Value of Imports $ Per Carat	Secondary Production	Imports For Consumption	Exports & Reexports	Govt. Sales	Apparent Consumption	Price Value of Imports $ Per Carat	Net Import. Reliance % of Consumption
1986	80.0	3.1	37.1	51.2	.6	—	68.4	1.25	1.5	8.9	4.1	2.0	6.3	7.23	76
1987	W	3.0	45.0	56.8	.6	—	W	1.28	.3	3.9	3.0	2.0	1.2	10.86	75
1988	W	6.6	64.3	74.5	.6	—	W	1.03	.6	6.9	3.0	1.8	4.5	9.31	87
1989[1]	90.0	3.0	61.6	78.2	.6	—	75.8	.72	.3	8.8	2.8	—	6.6	6.94	91
1990[2]	90.0	5.9	85.4	71.0	.6	3.0	112.7	.76	.6	11.0	1.7	—	9.8	6.57	95
1991[2]	90.0	3.2	70.6	83.2	.6	3.3	83.3	.81	.3	6.4	1.8	—	5.0	7.45	92

[1] Preliminary. [2] Estimate. [W] Withheld—Proprietary Data. *Source: Bureau of Mines*

Eggs

World egg production was in a period of moderate growth in 1991, with output in reporting countries expected to expand about 3 percent, the same as the 1990 rate. China was the world's largest producer, accounting for about 27 percent of world output, followed by the former USSR with about 15.5 percent, the EC with 14.7 percent, the U.S. with 12.6 percent, and Mexico with just over 3 percent.

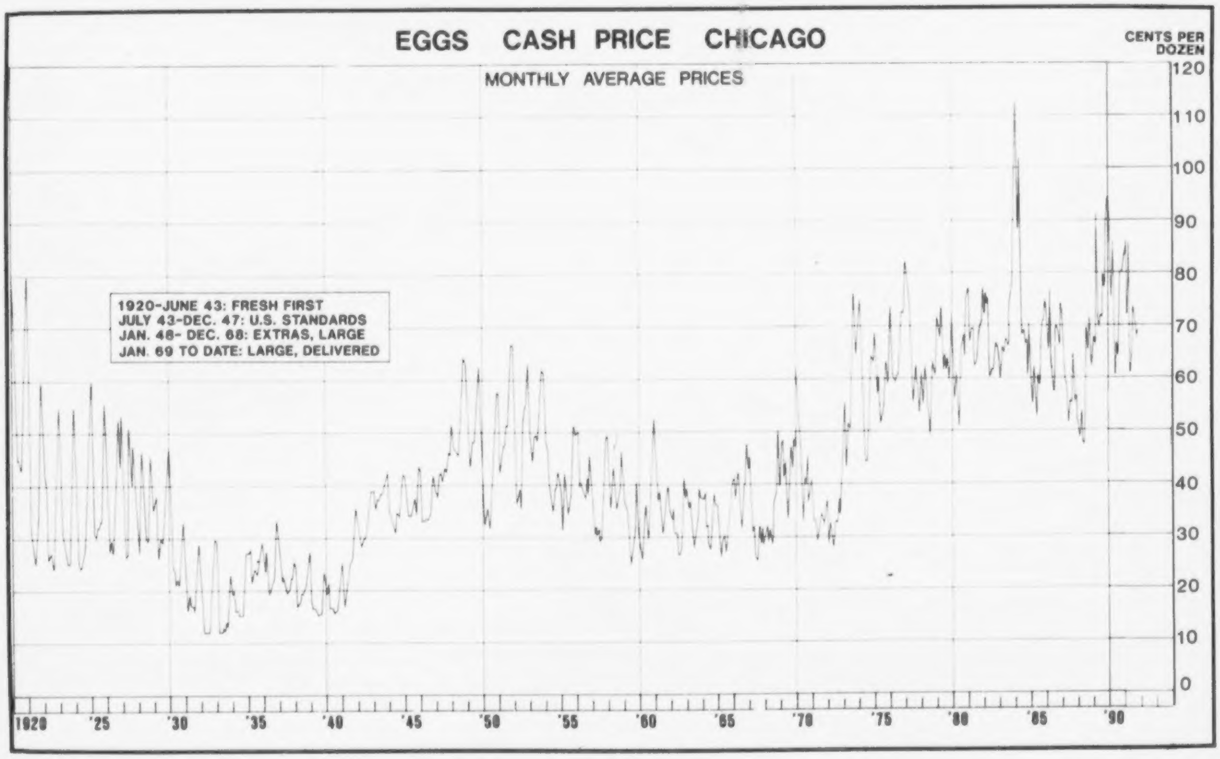
U.S. output was slightly higher in 1991, as producers saw the third consecutive year of positive returns. Total egg production rose about 1 percent, to 5.7 billion dozen, with table eggs representing about 86 percent of output. Based on 1990 output, the leading egg producing states in the U.S. are California, with about 11 percent of domestic production, Indiana with 8 percent, and Pennsylvania with just over 7 percent.

Per capita consumption in the U.S. was estimated at 232-233 eggs in 1991, down slightly from the year-earlier level. Egg consumption has been in a long downtrend in the U.S. Health concerns, including salmonella fears and the trend towards low-cholesterol diets, have impacted on domestic consumption for the past several years. But the drop in usage has leveled off somewhat, due in part to the growth of egg product usage.

Egg product usage was expected to be about 23-24 percent of total egg consumption in 1991, up from 21.5 percent a year earlier. This category includes items such as ice cream, pasta, cakes, etc., and has shown strong growth as a percentage of total egg consumption.

Primary egg exporting countries include the Netherlands, Turkey, the U.S., and China. U.S. egg exports rose sharply in 1991, reflecting lower prices and large sales under the Export Enhancement Program. EEP sales will be important again in 1992, particularly to Hong Kong and the Middle East. U.S. exports in 1992 are expected to be about the same as the 1991 level of 140 million dozen. The top markets for U.S. shell eggs in 1991 were Mexico, Hong Kong, Canada, and the Caribbean. Japan is an important market for egg products.

Wholesale egg prices for 1991 were expected to average 77 to 79 cents a dozen, about 4-5 cents below a year earlier. Retail prices for Grade A, large eggs were expected to average slightly below $1.00 a dozen for the year, compared with $1.01 the previous year. Net returns should again be positive for U.S. egg producers in 1992, but will likely be lower than those of 1991 because of weaker egg prices. With U.S. egg production forecast to be up about 1 percent in 1992, wholesale egg prices are expected to drop to a range of 72-77 cents per dozen.



World Production[2] of Eggs In Billions of Eggs

Year	Argentina	Australia	Bel. & Lux.	Brazil	Canada	Israel	France	Germany	Italy	Japan	Netherlands	Poland	Spain	South Africa	USSR	United Kingdom[3]	United States
1983	3.3	3.5	3.2	10.0	6.1	1.8	15.0	13.0	10.9	34.8	10.7	7.6	12.2	3.3	75.1	13.2	67.9
1984	3.2	3.5	3.1	9.5	5.9	2.1	14.9	13.2	10.8	35.5	11.1	8.2	10.1	3.3	76.5	13.0	68.5
1985	3.2	3.3	3.0	11.8	5.9	2.1	14.9	12.8	10.9	35.7	11.1	8.6	10,2	3.2	77.3	13.1	68.3
1986	3.2	3.2	2.9	13.0	5.9	1.8	15.0	12.8	10.3	37.1	10.9	8.3	10.9	3.2	79.9	13.2	69.2
1987	3.3	3.2	2.9	15.4	5.7	1.7	14.5	12.3	10.7	39.6	10.9	8.0	10.5	3.4	81.9	13.3	70.4
1988	3.3	3.2	2.8	14.9	5.7	1.9	15.3	12.3	11.2	40.1	10.8	8.2	10.9	3.7	85.2	13.5	69.4
1989	3.4	3.3	2.7	12.2	5.7	1.9	15.1	11.9	11.2	40.4	10.7	8.2	10.1	4.0	84.6	12.3	67.2
1990[1]	3.9	3.5	2.9	13.5	5.7	1.8	14.6	11.9	11.5	39.9	10.8	7.6	10.7	4.2	82.0	12.4	67.9
1991[4]	4.4	3.5	2.9	14.4	5.6	1.9	14.8	15.2	11.6	40.3	11.3	7.8	10.7	4.2	81.5	12.5	68.6

[1] Preliminary. [2] Relates to farm production in Canada and the United States. Information for many countries is not explicit on this point. [3] Farm production, years ending May. [4] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.*

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Salient Egg Statistics in the United States

Year	Hens & Pullets		Rate of Lay Per Layer During Year[3]	Eggs				Gross Income[5]	Total Egg Production[6]	Imports[7]	Exports[7] and Shipments	Used for Hatching	Civilian Consumption	
	On Farms Dec. 1[2]	Avg. Number During Year		Total Produced	Price (in ¢) Per Dozen	Consumed[4] on Farms	Sold						Total	Per Capita Eggs (Number)
	Millions		Number	Billions				Billion $	Million Dozen					
1983	278.5	276.3	247	68.2	61.1	.42	67.75	3.47	5,659	23	112	500	5,081	261.1
1984	285.8	278.0	245	68.2	72.3	.39	67.84	4.11	5,708	32	86	530	5,123	260.8
1985	279.8	276.7	247	68.4	57.1	N.A.		3.25	5,688	13	101	548	5,052	256.0
1986	279.9	276.3	248	68.4	61.6			3.51	5,704	14	130	567	5,023	253.9
1987	288.3	280.6	248	69.5	61.6			3.18	5,868	6	111	599	5,160	254.9
1988	275.4	277.1	251	69.4	62.1			3.06	5,784	5	142	606	5,041	246.8
1989	270.6	269.3	250	67.2	81.9				5,598	25	92	643	4,893	237.3
1990[1]	275.1	269.7	252	67.8	82.2				5,660	9	101	676	4,891	234.8
1991[8]			251		78.0				5,732	2	145	706	4,882	232.0

[1] Preliminary. [2] Of laying age. [3] Number of eggs produced during the year divided by the average number of hens & pullets of laying age on hand during the year. [4] Consumed in households of farm producers. [5] Value of sales plus value of eggs consumed in households of producers. [6] Farm production, plus nonfarm output estimated at 1 percentage point less each year. [7] Shell-egg equivalent of eggs and egg products. [8] Estimate. *Source: Agricultural Marketing Service, U.S.D.A.*

T.211

Average Wholesale Prices of Shell Eggs (Large) Delivered, Chicago In Cents Per Dozen

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	60.2	62.7	66.2	64.9	68.4	68.0	66.2	74.4	76.2	77.9	88.4	98.6	72.7
1984	112.3	102.6	88.3	101.8	74.3	68.1	69.0	66.5	67.2	60.7	70.4	62.2	78.6
1985	58.4	55.1	62.3	57.3	52.9	60.8	58.6	66.4	70.5	70.7	74.6	73.2	63.4
1986	70.6	65.7	76.9	62.6	62.0	57.3	69.4	70.0	69.4	66.3	74.1	72.8	68.1
1987	64.4	62.0	59.2	59.0	51.8	55.6	55.4	58.7	64.8	55.5	56.3	52.1	57.9
1988	51.2	48.9	53.6	47.9	47.1	52.8	69.8	65.4	71.4	63.1	62.2	66.1	58.3
1989	67.8	66.6	91.0	71.6	69.8	72.0	71.8	79.6	77.2	79.4	89.1	94.3	77.7
1990[1]	88.6	75.1	86.1	78.6	60.3	66.9	64.2	73.9	75.4	80.0	80.0	83.1	76.0
1991[1]	86.0	72.0	85.8	67.6	60.9	63.4	73.1	71.3	68.8	67.9	68.7		

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.*

T.212

Total Egg Production in the United States In Millions of Eggs

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total[2]
1983	5,931	5,354	5,928	5,622	5,711	5,526	5,666	5,639	5,493	5,699	5,570	5,772	68,169
1984	5,685	5,326	5,796	5,643	5,742	5,525	5,750	5,766	5,622	5,856	5,747	6,040	68,230
1985	5,950	5,293	5,923	5,670	5,721	5,499	5,661	5,686	5,545	5,761	5,658	5,889	68,256
1986	5,856	5,292	5,899	5,641	5,779	5,593	5,689	5,701	5,536	5,793	5,730	6,022	68,531
1987	5,989	5,417	6,093	5,864	5,925	5,685	5,863	5,861	5,756	6,008	5,873	6,084	70,418
1988	6,047	5,667	6,050	5,767	5,839	5,575	5,740	5,762	5,589	5,838	5,697	5,839	69,402
1989	5,758	5,182	5,782	5,569	5,696	5,498	5,648	5,613	5,450	5,658	5,543	5,777	67,041
1990	5,702	5,165	5,829	5,646	5,757	5,526	5,703	5,719	5,534	5,785	5,689	5,855	67,910
1991[1]	5,837	5,284	5,889	5,621	5,761	5,609	5,800	5,808	5,630	5,872			

[1] Preliminary. [2] Dec. 1 previous year thru Nov. 30. *Source: Crop Reporting Board, U.S.D.A.*

T.219

EGGS

Shell Eggs: Civilian Per Capita Disappearance in the United States Number of Eggs

Year	Shell Equivalent														
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total[1]	Processed[2]	Total
1980	21.1	19.0	20.9	19.4	19.8	18.7	19.0	19.6	19.4	19.8	20.0	20.7	237.3	35	272
1981		58.5			56.7			57.3			60.7		233.1	33	265
1982		58.6			57.0			56.5			59.1		231.2	34	265
1983		57.8			55.5			55.0			57.6		225.9	35	261
1984		55.7			54.8			55.2			57.7		223.4	38	261
1985		55.3			52.2			52.5			54.7		214.6	38	253
1986		54.0			51.5			51.2			53.8		210.5	39	250
1987		53.3			52.0			51.9			53.4		210.6	43	254
1988		52.9			49.1			49.1			50.4		201.6	44	246
1989		48.7			46.8			47.0			48.7		192.9	43	234
1990[3]		46.9			46.2			44.9			47.6		186.7		
1991[3]		46.3			43.5			44.6							

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[1] Monthly totals do not necessarily add to yearly figures due to rounding. [2] Liquid, frozen, & dried egg (egg solids) converted to shell egg equivalent. [3] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.214

Egg-Feed Ratio[1] in the United States

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	5.9	5.7	5.6	5.9	5.2	5.2	5.5	5.8	6.4	6.5	7.2	6.7	6.0
1982	6.6	6.8	7.1	6.6	5.6	5.3	5.7	5.4	6.0	6.3	6.3	6.0	6.2
1983	5.7	5.8	6.1	5.8	6.0	5.8	5.7	6.1	6.0	6.2	6.9	7.7	6.0
1984	8.8	8.5	7.4	8.5	6.5	5.8	5.8	5.8	5.9	5.7	6.5	6.3	6.8
1985	5.5	5.6	6.3	5.7	5.5	5.9	5.9	6.5	7.1	7.3	7.5	7.4	6.3
1986	7.2	6.9	7.6	6.4	6.4	5.7	6.9	7.3	7.3	7.0	8.0	7.8	7.0
1987	7.3	7.1	6.6	6.6	5.9	6.0	5.7	5.6	6.5	6.0	6.4	5.7	6.3
1988	5.6	5.3	5.6	5.2	5.0	5.3	4.9	4.9	5.4	5.3	5.4	5.4	5.3
1989	6.0	5.8	7.4	6.3	5.9	6.1	6.2	6.9	6.8	7.2	7.9	8.3	6.7
1990[2]	8.4	7.1	8.0	6.6	5.2	5.6	5.4	6.4	6.7	7.4	7.3	7.7	6.9
1991[3]	8.0	6.8	8.1	6.7	6.1	6.1	6.9	6.8	6.7	6.4			

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[1] Pounds of laying feed equivalent in value to one dozen eggs. [2] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.215

Total Eggs—U.S. Supply and Distribution In Millions of Dozen

Year & Quarters	Supply				Utilization					
							Domestic Disappearance			
									Civilian[1]	
	Production	Imports[1]	Beginning Stocks[1]	Total Supply	Ending Stocks[1]	Exports & Shipments[1]	Eggs Used for Hatching	Military	Total	Per Capita (Number)
1986 I	1,421	3.6	10.7	1,435	8.7	33.5	139.2	4.6	1,254	62.5
II	1,418	4.0	8.7	1,431	11.9	28.2	145.1	4.2	1,245	62.0
III	1,411	2.2	11.9	1,425	11.5	36.5	141.4	4.5	1,235	61.3
IV	1,456	3.9	11.5	1,471	10.4	31.4	141.2	4.2	1,288	63.8
1987 I	1,458	2.6	10.4	1,471	11.9	23.6	147.6	4.5	1,288	63.6
II	1,456	1.2	11.9	1,469	13.8	23.7	154.9	4.1	1,277	62.9
III	1,457	1.0	13.8	1,472	13.5	21.5	149.2	4.6	1,287	63.2
IV	1,497	.8	13.5	1,511	14.4	42.4	147.4		1,307	64.0
1988 I	1,480	.9	14.4	1,496	11.7	33.7	150.2		1,300	63.5
II	1,432	.7	11.7	1,444	20.1	34.1	153.8		1,236	60.3
III	1,424	2.1	20.1	1,447	17.6	33.4	151.2		1,244	60.5
IV	1,447	1.6	17.6	1,466	15.2	40.6	150.6		1,260	61.1
1989 I	1,389	1.9	15.2	1,406	11.7	23.7	155.3		1,215	58.8
II	1,394	8.2	11.7	1,414	12.2	21.2	165.4		1,215	58.7
III	1,389	10.4	12.2	1,412	11.6	23.2	161.4		1,216	58.6
IV	1,415	4.6	11.6	1,431	10.7	23.5	160.5		1,236	59.4
1990[2] I	1,391	1.9	10.7	1,404	13.4	18.4	167.3		1,205	58.1
II	1,411	4.1	13.4	1,428	14.4	18.8	173.1		1,222	58.8
III	1,413	2.7	14.4	1,430	13.1	25.9	168.9		1,222	58.6
IV	1,445	0.4	13.1	1,458	11.6	37.5	166.6		1,243	59.4
1991[2] I	1,418	0.3	11.6	1,430	11.1	34.8	174.2		1,209	57.7
II	1,416	0.4	11.1	1,427	11.2	38.0	181.4		1,197	57.0
III	1,437	1.0	11.2	1,449	12.8	35.0	175.9		1,225	58.2

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[1] Shell eggs & the approx. shell-egg equivalent of egg product. [2] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.213

Hens and Pullets of Laying Age (Layers) in the U.S., First of Month In Millions

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1984	277.2	276.5	277.0	278.9	276.1	276.2	276.5	274.3	277.8	280.5	282.2	285.8
1985	286.9	281.7	279.0	276.2	272.6	269.1	269.7	271.2	273.8	276.0	280.9	279.8
1986	280.2	279.5	279.2	277.3	275.0	272.9	270.7	272.3	272.6	275.8	279.3	279.9
1987	282.7	283.8	282.6	282.4	279.0	277.3	275.5	277.1	278.8	282.6	282.9	288.0
1988	286.1	284.5	281.2	278.3	275.0	271.4	270.8	272.2	274.2	275.8	276.0	274.0
1989	272.5	272.1	270.4	268.3	267.3	267.2	267.0	267.0	267.8	269.0	270.5	271.0
1990	271.7	271.9	271.9	271.3	269.5	267.1	266.1	267.0	268.0	269.6	271.0	272.0
1991[1]	273.0	273.5	272.3	271.0	271.2	271.3	271.1	271.5	273.2	275.5		

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.216

Eggs Laid Per Hundred Layers in the United States In Number of Eggs

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Average
1984	2,054	1,925	2,085	2,032	2,079	1,999	2,086	2,088	2,013	2,080	2,023	2,109	2,046
1985	2,093	1,887	2,134	2,066	2,112	2,041	2,093	2,086	2,017	2,069	2,018	2,103	2,060
1986	2,092	1,894	2,120	2,043	2,110	2,058	2,095	2,092	2,019	2,087	2,051	2,115	2,065
1987	2,089	1,890	2,132	2,069	2,106	2,033	2,097	2,083	2,024	2,098	2,042	2,117	2,065
1988	2,114	1,992	2,151	2,072	2,123	2,054	2,120	2,117	2,039	2,117	2,065	2,132	2,091
1989	2,112	1,903	2,137	2,075	2,131	2,057	2,117	2,102	2,035	2,103	2,048	2,131	2,079
1990	2,131	2,098	1,899	2,143	2,080	2,136	2,069	2,142	2,065	2,145	2,099	2,152	2,095
1991[1]	2,152	2,127	1,931	2,163	2,070	2,125	2,152	2,140	2,060	2,131	2,087		

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.221

Egg-Type Chicks Hatched by Commercial Hatcheries in the United States In Millions

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	36.9	37.5	45.7	47.9	49.0	46.5	38.4	34.8	33.1	31.4	30.1	27.1	458.5
1985	28.3	28.4	36.9	40.9	39.0	33.8	32.1	32.5	33.6	33.6	33.6	34.2	406.8
1986	34.5	34.8	39.5	42.4	42.5	37.3	33.6	33.4	32.6	32.4	27.5	33.3	423.7
1987	34.2	35.8	41.7	42.4	40.9	37.3	33.4	34.7	31.8	34.0	30.6	31.2	427.8
1988	29.3	28.4	35.6	34.7	36.0	33.0	24.9	27.8	30.9	31.0	29.4	27.2	368.3
1989	26.7	27.4	32.6	36.1	38.5	34.7	29.8	32.8	32.9	33.3	29.7	29.3	383.7
1990	32.0	32.2	36.5	36.9	37.9	34.5	31.6	33.0	31.2	31.9	30.0	31.3	399.0
1991[1]	33.1	34.7	37.0	39.5	38.9	35.5	34.7	33.3	33.9	33.7	30.3		

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.220

U.S. Cold Storage Holdings of Shell Eggs, 1st of Month In Thousands of Cases (One Case = 30 Dozen)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1984	13	28	17	36	35	41	42	29	31	23	37	35
1985	31	30	29	23	26	30	21	30	20	22	23	28
1986	24	28	21	20	32	44	38	25	33	29	20	29
1987	22	20	25	32	28	38	32	34	32	33	51	40
1988	43	67	53	33	14	21	30	28	25	23	24	26
1989	9	12	7	16	18	26	27	12	17	23	6	11
1990	12	22	16	23	12	21	22	29	19	18	11	16
1991[1]	15	17	9	14	12	15	13	13	10	13	16	13

[1] Preliminary. *Source: Crop Reporting, Board U.S.D.A.* T.217

U.S. Cold Storage Holdings of Frozen Eggs, 1st of Month In Millions of Pounds[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1984	11.8	11.0	11.4	12.0	12.7	12.8	16.4	17.5	16.6	16.7	17.9	16.2
1985	13.4	14.9	13.9	13.5	13.2	14.4	15.3	18.0	18.4	16.4	15.1	13.8
1986	13.2	12.7	12.8	10.7	12.5	11.6	14.2	15.1	15.0	14.0	14.0	13.0
1987	12.8	14.3	13.5	14.5	14.9	17.4	16.9	17.3	17.5	16.5	17.9	17.4
1988	17.3	18.3	18.3	14.1	17.3	20.3	25.3	22.9	24.5	22.2	20.0	17.9
1989	19.6	19.7	19.0	14.8	15.3	16.2	15.1	16.5	15.0	14.4	14.9	13.4
1990	13.6	14.2	15.2	16.8	19.7	16.8	18.1	17.1	17.1	16.6	16.8	17.2
1991[2]	14.7	14.8	14.0	14.1	13.0	13.5	14.2	18.1	16.3	16.5	17.0	15.1

[1] Converted on basis 39.5 pounds frozen eggs equals 1 case. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.218

Electric Power

U.S. electricity sales rose an estimated 2.4 percent in 1991 to 2.771 trillion kilowatt-hours and were forecast to increase by 3.2 percent in 1992. A modest improvement in the economy and a return to normal, colder weather in the first quarter of 1992 were expected to raise consumption.

Growth in demand was strong in 1991, despite the lingering recession, because of above-normal spring and summer temperatures. If the weather had been closer to seasonal norms earlier in 1991, total demand would have increased by only 1.4 percent, according to the U.S. Department of Energy. Air-conditioning demand helped residential use rise by 4.9 percent to 966.5 billion kilowatt-hours from 921.1 billion in 1990. Residential demand was expected to increase by 3 percent in 1992 to 995.9 billion kilowatt-hours.

Sluggish manufacturing demand because of the recession reduced industrial electricity consumption by 1.5 billion kilowatt-hours to 936 billion in 1991. Industrial demand was forecast to increase 3 percent in 1992 to 965.3 billion kilowatt-hours. Commercial use was expected to grow by 2.5 percent in 1991 to 771.3 billion kilowatt-hours and to rise by 3.8 percent in 1992.

Real residential electricity prices, declining since 1986, were likely to fall in 1991 and 1992. The declines were expected because of lower fuel costs, particularly for coal, and the effects of lower interest rates on the cost of capital to utilities. However, natural gas prices to electric utilities were expected to rise by 6 percent in 1992, after falling by 8 percent in 1991. Hydroelectric power, which is the cheapest source, was restricted in 1991 by the lingering effects of drought in parts of the Northeast, California and the Great Plains. U.S. imports from Ontario and Quebec also were affected by the recession. In Maine, a contract to import power from New Brunswick was cancelled.

Assuming the resumption of normal precipitation in 1992, hydroelectric power generation was expected to increase by 4 percent to 297.8 billion kilowatt-hours from 286.4 billion in 1991. However, as in 1991, coal-fired generation was due to show the largest increase because of new capacity that was scheduled to come on line. Coal generated 1,570.3 billion kilowatt-hours in 1991 and was expected to produce 1,633.9 billion in 1992, a gain of 4 percent.

Natural gas was forecast to generate 267.3 billion kilowatt-hours in 1991, up 1.2 percent from 1990. Increased capacity, including co-generation plants, was expected to generate 275.1 billion kilowatt-hours in 1992.

World Electricity Production In Billions of KWH

Year	Australia	Brazil	Canada	China	France	Germany	India	Italy	Japan	Poland	Sweden	Spain	South Africa	United Kingdom	United States	USSR
1980	96.3	139.5	377.5		243.3	368.8		185.7	577.5	121.9	93.4		95.0	284.9	2,354	1,295
1981	102.5	142.2	390.9		263.4	367.1		178.9	583.2	115.0	102.8	110.0	97.4	276.7	2,359	1,325
1982	104.9	152.0	387.5	327.7	265.4	365.2	130.0	181.8	581.4	117.6	99.5	113.5	108.2	271.3	2,302	1,367
1983	106.3	162.0	408.4	351.4	281.3	372.0	139.9	180.1	618.1	125.9	108.9	114.7	108.3	275.6	2,368	1,396
1984	112.9	178.5	438.0	377.0	307.2	392.8	156.6	179.5	648.6	135.3	123.3	118.1	121.6	280.4	2,479	1,493
1985	121.0	192.7	459.0	410.7	325.7	406.7	170.2	182.3	672.0	137.7	136.5	125.6	121.5	293.7	2,568	1,544
1986	126.2	201.3	468.6	449.5	343.0	406.4	187.5	189.0	671.8	140.3	138.0	127.7	146.5	298.2	2,599	1,599
1987	132.3	202.3	496.3	497.3	352.6	418.5	201.9	201.0	699.0	145.8	129.6	129.4	150.6	301.9	2,719	1,665
1988	139.9	214.0	506.0	593.5	365.5	422.7	221.1	203.2	753.7	144.3	149.4	135.9	156.7	309.1	2,876	1,705
1989[1]	147.9	230.0	499.5	594.6	406.9	440.6	245.1	210.8	800.0	145.5	139.3	141.2	162.3	311.2	2,981	1,722
1990[2]	152.2		557.8	625.2	405.0	449.2	264.3	225.6	767.3	136.3	142.0	144.8	147.2	317.4	3,005	1,728

[1] Preliminary. [2] Estimate. *Source: United Nations* T.222

Installed Capacity, Capability & Peak Load of the U.S. Electric Utility Industry In Millions of Kilowatts

	Installed Generating Capacity at Dec. 31															
		Type of Prime Mover				Type of Ownership										
Year	Total Electric Utility Industry	Hydro	Gas Turbine & Steam	Nuclear Power	Internal Combustion	Investor Owned	Cooperatives	Sub-Total Gov't.	Municipal Utilities	Federal	Power Districts, State Projects	Capability at Winter Peak Load	Non-Coincident Winter Peak Load	Margin of Reserve (%)	Total Generation	Peak Load Factor (%)
1980	613.7	76.4	475.3	56.5	5.6	477.1	15.4	121.2	34.6	59.1	27.5	572.2	384.6	23.5	2,293	61.1
1981	635.0	77.2	491.3	60.8	5.6	490.8	18.4	125.7	35.1	61.0	29.5	581.1	391.1	25.2	2,311	61.6
1982	650.1	78.1	503.8	63.0	5.1	499.1	21.5	129.5	35.8	62.5	31.2	596.9	373.3	29.2	2,241	62.1
1983	658.2	79.0	507.1	67.1	5.0	505.5	22.2	130.5	36.6	63.0	30.9	611.6	410.8	25.0	2,310	59.5
1984	672.5	80.6	516.5	70.5	4.8	514.9	24.7	132.9	36.7	63.3	32.8	622.1	436.4	25.3	2,416	59.7
1985	688.7	83.0	520.3	80.4	5.0	530.4	24.6	133.8	37.0	63.7	33.0	636.5	423.7	25.9	2,470	62.0
1986	707.7	85.2	524.1	92.4	5.9	544.2	26.4	137.1	38.6	63.9	34.6	646.7	422.9	24.8	2,487	60.7
1987	718.1	85.9	524.3	101.6	6.2	552.8	26.4	138.9	39.4	64.7	34.9	663.0	448.3	23.4	2,572	60.8
1988	723.9	86.9	526.6	103.4	7.0	557.8	26.4	139.7	40.4	64.8	34.5	676.9	466.5	20.0	2,704	59.5
1989	730.9	87.5	529.1	106.7	7.5	562.1	26.4	142.4	40.7	67.2	34.5	685.2	496.4	22.3	2,784	62.2
1990[1]	735.1	87.6	531.0	108.2	8.3	567.4	26.3	141.4	39.7	67.2	34.5	696.8	484.0	20.4	2,807	60.4

[1] Preliminary. [2] New series starting 1980. *Source: Federal Power Commission* T.223

Available Electricity & Energy Sales in the United States In Billions of Kilowatt Hours

	Net Generation								Sales to Ultimate Customers								
	Electric Utility Industry																
Year	Hydro	Natural Gas	Coal	Petroleum	Nuclear	Total[5]	Other Sources[2]	Total	Total Million $	Total[4]	Residential	Interdepartmental	Commercial	Industrial	Street & Highway	Other Public Authorities	Railways & Railroads
1978	280	305	976	365	276	2,206	3	2,300	69,853	2,018	679.2	7.1	480.7	782.1	14.8	49.5	4.3
1979	280	329	1,075	304	255	2,247	4	2,318	79,640	2,084	696.0	7.4	494.7	817.6	14.8	49.6	4.3
1980	276	346	1,162	246	251	2,286	6	2,351	95,462	2,126	734.4	6.4	524.1	793.8	14.8	48.3	4.3
1981	261	346	1,203	206	273	2,295	6	2,365	111,016	2,151	730.5	6.2	521.7	819.6	14.7	53.7	4.2
1982	309	305	1,192	147	283	2,241	5	2,241	121,584	2,100	732.7	5.4	517.0	770.4	14.2	55.7	4.3
1983	332	274	1,259	144	294	2,310	6	2,310	129,507	2,158	750.9	5.4	546.3	780.0	14.1	56.7	4.3
1984	321	297	1,342	120	328	2,416	9	2,416	142,281	2,286	780.7	5.8	583.8	836.1	14.1	61.0	4.5
1985	281	292	1,402	100	384	2,470	11	2,470	149,162	2,306	792.9	5.3	605.9	820.3	14.6	62.2	4.7
1986	291	249	1,386	137	414	2,487	12	2,487	152,814	2,355	820.8	5.2	630.3	817.4	14.9	62.0	4.7
1987	250	273	1,464	118	455	2,572	12	2,572	155,712	2,435	846.4	4.5	658.4	843.7	14.4	63.0	4.9
1988	223	253	1,541	149	527	2,704	12	2,704	162,188	2,550	892.1	4.4	698.1	896.0	14.5	64.6	5.1
1989	265	267	1,554	158	529	2,784	11	2,784	169,117	2,617	904.0	4.5	725.2	926	14.5	69.2	5.3
1990[1]	280	264	1,558	118	576	2,807	11	2,807	170,583	2,624	922	4.6	752.8	938	14.7	71.1	5.3
1991[3]	285	270	1,570	110	600	2,900	11	2,901	180,000	2,700	735	8.7	643.4	786	12.4	64.2	4.5

[1] Preliminary. [2] Includes electricity produced from geothermal, wood, waste, wind, solar, etc. [3] Estimate. [4] Also includes interdepartmental (averages about 600 million kwh). [5] Includes internal combustion. *Sources: Federal Power Commission; Edison Electric Institute* T.224

Electric Power Production by Electric Utilities in the U.S. In Billions of Kilowatt Hours

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1978	197.3	173.7	173.2	159.7	175.2	187.4	202.6	205.6	185.6	175.6	176.3	191.7	2,206
1979	209.7	186.3	182.8	170.0	178.1	186.7	202.3	204.9	180.8	179.7	177.5	188.7	2,247
1980	200.0	188.7	187.5	168.7	175.7	189.4	216.8	215.4	191.5	178.6	178.6	195.6	2,286
1981	206.5	179.6	185.6	172.5	177.8	202.7	220.4	210.4	186.8	181.4	175.6	195.6	2,295
1982	209.4	180.3	187.7	172.6	177.1	186.1	210.6	205.7	180.7	173.0	173.4	184.7	2,241
1983	195.6	172.5	182.5	170.4	174.4	191.0	220.2	230.0	195.6	182.9	182.9	212.3	2,310
1984	216.6	189.6	200.1	181.1	192.2	209.6	221.2	229.3	195.2	190.9	190.4	200.0	2,416
1985	227.9	198.2	195.0	184.9	196.8	205.4	226.7	226.1	202.5	194.8	192.4	219.3	2,470
1986	217.5	192.3	196.8	186.1	197.3	215.0	242.7	225.2	206.7	197.8	196.4	213.6	2,487
1987	222.7	194.0	201.8	189.5	206.1	225.6	247.9	247.6	213.0	203.0	200.3	220.5	2,572
1988	237.6	216.7	213.8	195.8	208.2	232.5	257.2	267.4	220.0	210.4	209.4	232.6	2,704
1989	231.3	219.1	226.4	207.7	219.8	235.4	256.7	258.3	226.9	219.1	219.0	258.6	2,784
1990[1]	237.0	212.7	225.7	210.8	222.6	248.9	266.2	268.2	237.7	224.8	213.6	237.3	2,807
1991[1]	248.0	210.5	221.1	208.9	233.9	248.2	271.5	267.7	233.9	223.2			

[1] Preliminary. *Source: Federal Power Commission*

T.225

Use of Fuels for Electric Generation in the United States

	Consumption of Fuel									
Year	Coal (Thousand Short Tons)	Fuel Oil (Thousand Barrels)[2]	Gas (Million Cubic Feet)	Total Fuel in Coal Equivalent (Thousand Short Tons)	Net Generation by Fuels[3] (Million Kw. Hr.)	Lbs. of Coal Per Kw. Hr. (Pounds)	Cost of Fossil-Fuel at Elec. Util. ¢ Mil. BTU	Average Cost of Fuel Per Kw. Hr. (¢)	Heat Rate BTU Per Kw. Hr.	Cost Per Million BTU Consumed (¢)
1978	481,624	635,839	3,188,370	811,814	1,646,163	.986	141.1	1.53	10,495	145.3
1979	527,051	523,297	3,490,523	837,371	1,708,029	.981	163.9	1.62	10,470	155.4
1980	569,274	420,214	3,681,595	916,952	1,753,749	.980	192.8	2.07	10,489	197.0
1981	596,797	351,111	3,640,154	922,133	1,755,401	.992	225.6	2.42	10,506	230.2
1982	593,666	249,771	3,225,518	858,869	1,644,062	.996	224.9	2.46	10,517	234.0
1983	625,211	245,497	2,910,767	861,621	1,678,021	.993	220.6	2.40	10,539	227.1
1984	664,399	204,479	3,111,342	909,156	1,758,882	.990	219.1	2.41	10,385	232.0
1985	693,841	173,414	3,044,083	926,793	1,794,276	.990	209.4	2.27	10,429	217.7
1986	685,056	230,482	2,602,370	907,720	1,770,925	.989	175.0	1.92	10,423	184.5
1987	717,894	199,378	2,844,051	944,420	1,854,895	.981	170.6	1.84	10,354	177.7
1988	758,372	248,096	2,635,613	984,969	1,942,353	.984	164.3	1.76	10,328	170.7
1989	766,888	267,451	2,787,012	1,005,000	1,978,577	.987	167.5	1.79	10,312	174.0
1990[1]	771,678	196,175	2,786,153	986,400	1,939,706	.990	168.9	1.80	10,367	174.1
1991[4]	775,597	185,000	2,800,000				160.3			

[1] Preliminary. [2] 42-gallon barrels. [3] Excludes wood & waste fuels. [4] Estimate. *Source: Federal Power Commission* T.226

Fertilizer

The three main fertilizer chemicals used in the U.S. are nitrogen, derived from ammonia; phosphorous, made from phosphate rock; and potassium, made from potassium chloride, commonly known as potash. Nitrogen-based chemicals accounted for about 53 percent of total U.S. fertilizer consumption, those based on phosphorous- 26 percent, and those based on potassic fertilizer- 21 percent. A futures contract on diammonium phosphate, a major fertilizer chemical containing nitrogen and phosphorous, began trading in October of 1991.

The nitrogen fertilizer industry in the U.S. continued to restructure, because of weak prices, low-priced imports, and excess supply. U.S. ammonia producers operated at or close to capacity in 1991, and production was estimated at 14 million tons, slightly higher than the 1990 level. About 80 percent of U.S. ammonia production is used for fertilizer. Louisiana, Oklahoma and Texas account for about 60 percent of U.S. ammonia production. Ammonia prices rose sharply late in 1990 because of the situation in the Persian Gulf, a major producing area. Prices remained high in 1991, averaging $115/ton. Much of the ammonia production capacity in Iraq and Kuwait was destroyed during the war, and it was expected to take several years to recover lost capacity.

U.S. marketable phosphate rock output was about 47.2 million tonnes in 1991, slightly above the year-earlier level. About 95 percent of U.S. phosphate rock use goes towards fertilizer. Florida and North Carolina are the major producing states for phosphate rock. Domestic use was expected to be virtually in line with production in 1991. The U.S. is a net exporter of phosphate rock. Other major producers include the former USSR, Morocco, and China.

U.S. marketable production of potash was about 1.77 million tonnes in 1991. About three-quarters of domestic potash was produced as potassium chloride. Domestic consumption was forecast to be 5.34 million tonnes, making the U.S. heavily dependent on potash imports. U.S. imports in 1991 were expected to be about 4.2 million tonnes, and import reliance as a percentage of consumption was forecast to be 67 percent. Canada is the primary supplier of potash to the U.S., accounting for about 90 percent of U.S. imports. Major world producers of potash included Canada, the former USSR, and Germany.

U.S. fertilizer usage was expected to rise in 1992, leading to higher prices.

Futures Market

Diammonium phosphate futures are traded on the Chicago Board of Trade (CBOT).

World Production of Ammonia In Millions of Short Tons of Contained Nitrogen

Year	Bulgaria	Canada	China	France	East Germany	West Germany	India	Italy	Japan	Mexico	Netherlands	Poland	Romania	United Kingdom	United States	USSR	Total
1983	1.2	3.2	15.2	2.2	1.3	1.9	3.9	1.2	1.7	2.1	1.9	1.6	3.0	1.9	11.3	18.6	88.7
1984	1.3	3.9	15.4	2.6	1.3	2.2	4.4	1.3	1.8	2.0	2.5	1.6	3.2	2.0	13.4	19.5	96.9
1985	1.3	3.3	16.5	2.2	1.3	2.1	4.7	1.3	1.8	2.0	2.8	2.0	3.2	1.9	14.2	20.2	100.3
1986	1.2	3.2	17.1	2.2	1.3	1.7	5.4	1.7	1.7	1.8	3.0	2.3	3.4	1.5	11.9	21.6	100.9
1987	1.2	3.2	16.0	2.2	1.3	2.1	5.8	1.6	1.7	1.9	3.1	2.4	3.1	1.6	13.2	22.1	103.9
1988	1.2	3.6	17.9	2.0	1.3	1.9	6.8	1.7	1.7	2.3	3.3	2.4	3.1	1.1	13.8	22.2	108.4
1989	1.2	3.7	18.7	1.6	1.3	1.7	7.4	1.6	1.7	2.3	3.3	2.4	2.9	1.1	13.8	22.2	109.3
1990[1]		3.3		1.7		2.9	7.7	1.3	1.7	2.4	3.5			1.3	13.8		107.9
1991[2]		3.3		1.8		2.6	7.7	1.2	1.7	2.5	3.3			1.1	14.0		107.1

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines* T.227

U.S. Salient Statistics of Nitrogen[1] (Ammonia) In Thousands of Short Tons

Year	Net Import Reliance as a % of Appar. Con.	Production[1] (Fixed)			Imports (Fixed)[2]	Exports	Nitrogen[3] Compounds		Stocks Dec. 31		Ammonia Consumption (Apparent)	Average Price ($ Per Short Ton)			
		Fertilizer	Non-fertilizer	Total			Produced	Consumption	Ammonia	Fixed Nitrogen Compounds		Urea F.O.B. Gulf[2] Coast	Urea Deliv. Corn Belt	Ammonium Nitrate: Deliv. Corn Belt	Ammonia F.O.B. Gulf Coast
1982	8				1,737	610			1,970		14,145	122–125	135–145	125–145	120
1983	18				2,169	298			1,422		13,719	135–140	160–167	135–145	175
1984	13	12,397	1,332	13,729	2,699	438	9,801	9,858	1,704		15,708	147–149	168–200	135–150	147
1985	8	13,024	1,212	14,236	2,306	1,010	9,287	9,339	1,795		15,441	82–95	110–137	112–133	108
1986	13	10,852	1,057	11,909	2,048	531	8,100	8,147	1,507		13,714	75–78	90–110	100–120	75
1987	13	12,019	1,213	13,232	2,357	848	9,335	9,386	1,053		15,195	114–117	125–135	100–120	90
1988	15	12,566	1,261	13,827	3,032	642	10,228	10,287	1,020	777	16,250	139–145	150–155	128–135	128
1989	18	12,503	1,327	13,537	3,154	381	10,381	10,441	936	868	16,307	139–145	110–120	105–115	87
1990[4]	15			13,806	2,947	531			879		16,279				117
1991[5]	14			14,000	2,950	650			900		16,279				115

[1] Anhydrous ammonia, synthetic. [2] For consumption. [3] Major downstream nitrogen compounds. [4] Preliminary. [5] Estimate. *Source: Bureau of Mines* T.228

World Production of Phosphate Rock, Basic Slag & Guano In Ths. of Metric Tons (Gross Weight)

Year	Algeria	Brazil	China	Christmas Island	Israel	Jordan	Morocco	Nauru Island	Senegal	South Africa	Syria	Togo	Tunisia	United States	USSR	World Total
1983	893	3,208	12,500	1,094	2,969	4,749	20,106	1,684	1,521	2,887	1,229	2,081	5,924	42,573	33,100	140,889
1984	1,000	3,855	11,800	1,259	3,312	6,263	21,245	1,358	1,912	2,585	1,514	2,696	5,346	49,197	33,300	151,568
1985	1,207	4,214	6,970	1,187	4,076	6,067	20,737	1,508	1,814	2,433	1,270	2,452	4,530	50,835	33,750	148,849
1986	1,203	4,509	6,700	880	3,673	6,249	21,178	1,494	1,850	2,920	1,606	2,314	5,951	38,710	33,900	138,869
1987	1,073	4,777	9,000	842	3,798	6,800	20,000	1,376	1,874	2,623	1,986	2,644	6,390	40,954	34,100	144,231
1988	1,332	4,672	15,000	—	3,479	6,000	25,015	1,540	2,326	2,850	2,342	3,464	6,103	45,389	34,400	160,375
1989[1]	1,223	3,580	15,500	—	3,922	6,675	17,988	1,500	2,273	2,963	2,250	3,355	6,621	49,817	39,000	163,415
1990[2]	—	—	17,300	—	3,516	5,925	21,189	—	2,147	2,164	—	3,314	6,566	46,343	36,868	156,956
1991[2]	—	—	18,000	—	3,500	6,000	22,000	—	2,200	3,200	—	2,300	6,600	47,000	37,000	159,800

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines*

T.229

U.S. Salient Statistics of Phosphate Rock In Thousands of Metric Tons

Year	Mine Production	Marketable Production	Value Mil. $	Imports for Consumption	Exports	Apparent Consumption	Stocks, Dec. 31 (Producer)	Price—$ Avg. Per Metric Ton (f.o.b. Mine)	Avg. Price of Fla. & No. Car. $ Tonne—F.O.B. Mine (−60% to +74)		
									Domestic	Export	Average
1983	125,691	42,573	1,021	9	12,010	34,838	14,500	23.97	22.64	25.70	23.48
1984	163,012	49,197	1,182	9	11,528	41,758	11,897	23.99	22.67	26.28	23.48
1985	175,227	50,835	1,236	34	9,136	37,532	15,534	24.31	23.08	26.72	23.81
1986	135,683	40,320	897	528	7,848	34,456	13,277	22.25	21.64	25.02	22.31
1987	148,426	40,954	793	464	8,454	35,683	10,884	19.37	18.93	22.87	19.77
1988	162,299	45,389	888	673	8,092	41,022	9,323	19.56	18.29	25.24	19.58
1989	170,268	49,817	1,084	705	7,842	42,143	11,027	21.76	20.65	28.67	22.07
1990[1]		46,343		451	6,238	43,967	8,912	23.20			
1991[2]		47,000		450	6,000	41,450	9,000	24.00			

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines*

T.230

U.S. Salient Statistics of Potash In Thousands of Metric Tons (K_2O Equivalent)

Year	Net Import as % of Consumption	Production	Sales by Producers	Value Mil. $	Imports for Consumption	Exports	Apparent Consumption	Producer Stocks Dec. 31	$ per ton		Average Price[2] $ Per Tonne
									Avg. Value Per Ton of Product—$	Avg. Value of K_2O Equiv.	
1983	75	1,429	1,513	220.8	4,440	300	5,653	391	74.85	145.97	100
1984	74	1,564	1,639	241.8	4,829	446	6,022	312	75.95	147.55	109
1985	76	1,296	1,266	178.4	4,593	513	5,346	336	71.22	140.89	96
1986	75	1,202	1,147	144.9	4,212	547	4,843	378	63.24	126.28	82
1987	75	1,262	1,485	197.7	4,073	470	5,088	155	67.98	131.73	93
1988	71	1,521	1,427	240.3	4,217	380	5,264	248	85.75	168.37	132
1989	65	1,595	1,536	271.5	3,410	446	4,500	307	90.28	176.74	137
1990[1]	68	1,713			4,164	420	5,453	303	89.46	176.80	130
1991[3]	67	1,770			4,200	650	5,343	290			131

[1] Preliminary. [2] Unit of K_2O, standard 60% muriate f.o.b. mine. [3] Estimate. *Source: Bureau of Mines*

T.232

World Production of Marketable Potash In Thousands of Metric Tons (K_2O Equivalent)

Year	Canada (sales)	Chile	China	Brazil	France	Germany		Israel	Italy	Jordan	Spain	USSR	United States	United Kingdom	World Total
						East	West								
1983	6,938	21	29	—	1,536	3,431	2,419	1,000	184	172	657	9,294	1,429	308	27,418
1984	7,527	18	40	—	1,739	3,465	2,645	1,100	163	295	677	9,776	1,564	325	29,334
1985	6,661	21	40	—	1,750	3,465	2,583	1,200	205	561	659	10,367	1,296	343	29,151
1986	6,753	20	40	18	1,617	3,485	2,161	1,255	158	660	795	10,228	1,202	396	28,788
1987	7,668	23	40	62	1,539	3,510	2,199	1,253	178	734	741	10,888	1,262	429	30,526
1988	8,311	25	40	56	1,502	3,510	2,390	1,244	197	785	766	11,301	1,521	460	32,108
1989[1]	7,360	25	60	109	1,200	3,200	2,186	1,271	154	792	741	10,232	1,595	463	29,388
1990[2]	7,372	25	40	60	1,300	2,200	2,200	1,350	60	790	690	9,500	1,713	490	28,290
1991[2]	7,500	25	60	30	1,250	2,000	2,300	1,350	100	790	670	8,800	1,770	500	27,145

[1] Preliminary. [2] Estimate. *Source: U.S. Bureau of Mines*

T.231

Fish

Domestic fish supplies in 1991 came mainly from landings by the wild-catch industry and imports. Domestic landings expanded from 3.7 billion pounds in 1980 to 7.3 billion in 1990, a near doubling, and were estimated to have increased further in 1991. Much of the rise in the catch has been attributed to higher landings of Alaska pollock.

Domestic aquaculture production is concentrated in the catfish and crawfish industries in the Southeast and South Central states. The aquaculture industry in the West is centered on trout production, followed by salmon, catfish, and tilapia. Idaho, Washington, and California are the largest producers in that region. Shellfish are cultivated in a number of the nation's coastal areas, and oysters, clams and mussels are the main products.

Farm-raised fish and shellfish production in the U.S. was an estimated 860 million pounds in 1990, having tripled over the decade, and rose further in 1991. Most of the growth stemmed from an expansion in catfish production. Output of catfish has risen so rapidly that in 1991 it outpaced demand, depressing prices. Having averaged $1.72 a pound in 1990, whole catfish prices fell to $1.58 by August 1991.

The major U.S. seafood imports are shrimp, salmon, and oysters. During the first half of 1991, imports of frozen shrimp amounted to 217.6 million pounds, somewhat below 231.7 million in the first six months of 1990.

Canned salmon, frozen Pacific salmon, and frozen shrimp are the chief U.S. exports. In the first half of 1991, the U.S. exported 32.3 million pounds of canned salmon, valued at over $67 million.

The U.S. consumer price index for fish and seafood, as reported by the U.S. Department of Labor, rose every year from 1981 to 1990. At the end of 1990, the index stood at 148.5 (on a base of 1982-84 = 100 percent), and in January 1991 it increased to 151.1. By August 1991, seafood and fish prices had fallen and the index was 145.2.

The worldwide commercial catch of fish, crustaceans, and mollusks is nearly 100 million tonnes a year, and nearly half of that is from countries in Asia.

U.S. Fishery Products—Supply In Millions of Pounds

Year	Grand Total	For Human Food		For Industrial Use	Domestic Catch					Imports				
		Finfish	Shellfish		Total	% of Grand Total	For Human Food		For Industrial Use	Total	% of Grand Total	For Human Food		For Industrial Use
							Finfish	Shellfish				Finfish	Shellfish	
1986	14,368	7,087	2,533	4,748	6,031	42.0	2,240	1,153	2,638	8,337	58.0	4,847	1,380	2,110
1987	15,744	7,919	2,642	5,183	6,896	43.8	2,769	1,177	2,950	8,848	56.2	5,150	1,465	2,232
1988	14,628	7,786	2,719	4,123	7,192	49.2	3,306	1,282	2,604	7,436	50.8	4,480	1,437	1,519
1989[1]	15,485	9,735	2,533	3,217	8,463	54.7	4,897	1,307	2,259	7,022	45.3	4,843	1,226	958
1990														

[1] Preliminary. *Source: U.S. Dept. of Commerce, Fisheries Statistics Division*

U.S. Fisheries—Landings of Principal Species In Millions of Pounds

Year	Fish									Shellfish					
	Cod, Atlantic	Flounder	Halibut	Herring, Sea	Men-Haden	Pollock	Salmon, Pacific	Tuna	Whiting	Clams (Meats)	Crabs	Lobsters (Amer.)	Oysters	Scallops	Shrimp
													(Meats)		
1986	61	169	78	210	2,391	185	659	88	40	145	356	46	41	22	400
1987	59	200	76	207	2,712	598	562	100	35	134	386	46	40	41	363
1988	76	229	82	222	2,086	1,290	606	111	36	132	456	49	32	43	331
1989[1]	78	202	75	209	1,989	2,385	986	89	39	138	485	53	30	41	352
1990															

[1] Preliminary. *Source: U.S. Dept. of Commerce, Fisheries Statistics Division*

U.S. Fisheries: Quantity & Value of Domestic Catch & Consumption & World Fish Oil Production

Year	Disposition					For Human Food	For Industrial Pdt's.	Ex-vessel Value[3]	Avg. Price	Fish Per Capita Consumption	World[2] Fish Oil Production
	Fresh & Frozen	Canned	Cured	For Meal, Oil, Etc.	Total						
	Million Pounds							Mil.$	¢ Lb.	Lbs.	Thous. Tonnes
1986	2,487	1,134	60	2,350	6,031	3,393	2,638	2,763	45.8	14.8	1,384
1987	3,157	1,009	89	2,641	6,896	3,946	2,950	3,115	45.2	15.3	1,540
1988	3,813	1,017	86	2,276	7,192	4,588	2,604	3,520	48.9	15.2	1,610
1989[1]	5,209	1,244	58	1,952	8,463	6,204	2,259	3,238	38.3	15.6	1,410
1990[1]										15.4	1,560
1991[4]											1,570

[1] Preliminary. [2] Crop Years 1984–5. [3] At The Dock Prices. [4] Estimate. *Source: U.S. Dept. of Commerce Fisheries Statistics Division, Foreign Agricultural Service, U.S.D.A.*

Flaxseed and Linseed Oil

World flaxseed production in 1991/92 was estimated by USDA at 2 million tonnes, down about 12 percent from the previous season's large crop. Canada's output was expected to decline to 600,000 tonnes from 900,000, as plantings fell because of a low level of support in the farm income stabilization program. Argentina was due to produce a smaller crop of 480,000 tonnes, as plantings were the lowest in almost two decades. Argentine producers faced higher costs for inputs like herbicides, and they expected crop prices to be lower. Demand for flaxseed has fallen, and other oilseeds like sunflowerseed are more profitable to grow.

India's crop was projected to be 400,000 tonnes, and the Soviet Commonwealth was expected to produce 180,000 tonnes. Over the last several years, world flaxseed output has fluctuated, but the trend has been lower. Flaxseed is processed into linen fiber, linseed oil and meal. Linen competes with some other fibers that are cheaper to produce. Linseed oil is used as a drying agent in paint, and its use has declined with the widespread acceptance of water-based or latex paints.

Flaxseed production in the U.S. increased nearly 20 percent in 1991 to 4.5 million bushels. After many years of decline, U.S. flaxseed crops have expanded in the last two years because of changes in the farm program and favorable weather in the upper Midwest where the crop is grown. A price support loan rate for flaxseed and other minor oilseeds was implemented. Also, producers of major crops have the flexibility to plant minor oilseeds on some of their base acreage without losing program benefits. As a result, U.S. producers expanded flax acreage considerably.

The global flaxseed crush in 1991/92 was estimated to be 1.5 million tonnes, down slightly from the prior season, and the major processors were Argentina and Canada. World trade was projected to expand by 40 percent to 680,000 tonnes. Because of weak demand for linseed oil, Argentina was likely to export more flaxseed instead of the products.

World production of linseed meal was forecast to be 990,000 tonnes, down 5 percent. Exports were expected to fall to 440,000 tonnes from 490,000.

Global linseed oil output in 1991/92 was projected to be unchanged at 510,000 tonnes. Exports were estimated at 180,000 tonnes, down from 200,000 in 1990/91. Argentina shipped less oil to the Soviets, as the CIS was short of foreign exchange, and Argentina was unable to extend more credit. World consumption of linseed oil retreated to about 520,000 tonnes from 530,000 last season.

Futures Markets

Flaxseed futures are traded on the Winnipeg Commodity Exchange (WCE).

World Production of Flaxseed In Thousands of Metric Tons

Crop Year	Argentina	Australia	Czechoslovakia	Canada	Bangladesh	Egypt	France	Hungary	India	Mexico	Poland	Romania	Turkey	Uruguay	United States	USSR	World Total
1982–3	765	3	15	752	8	38	31	11	375	1	20	43	2	6	261	150	2,502
1983–4	660	4	15	444	8	16	22	11	444	4	19	23	2	9	175	259	2,139
1984–5	626	6	15	694	8	20	29	9	389	10	18	35	2	7	178	248	2,316
1985–6	460	12	15	902	8	22	34	7	380	4	18	36	5	6	211	201	2,350
1986–7	622	9	15	1,026	8	19	24	6	317	3	15	32	4	3	293	233	2,658
1987–8	535	8	15	729	40	19	22	7	393	3	11	33	4	1	189	228	2,269
1988–9	460	7	15	373	36	19	31	7	349	3	15	30	4	3	41	220	1,660
1989–90[1]	516	4	15	531	38	23	32	7	400	3	17	38	4	3	34	227	1,949
1990–1[2]	480			940					360						100	160	2,300
1991–2[2]	360			700					350						110	180	2,020

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.233

U.S. Supply and Distribution of Flaxseed In Thousands of Bushels

Year Beginning June	Supply							Distribution				
	Planted — 1,000 Acres —	Harvested	Yield Bush.	Total Stocks	Imports	Production	Total Supply	Seed	Crushing	Exports	Other[2]	Total Distribution
1981–2	605	577	12.6	2,733	3,502	7,289	13,524	691	11,231	11	−359	11,574
1982–3	780	735	14.0	1,950	1,921	10,278	14,149	486	8,722	638	1,091	10,937
1983–4	605	580	11.9	3,212	4,756	6,903	14,871	438	12,733	52	−68	13,155
1984–5	555	538	13.1	1,716	3,796	7,022	12,534	511	9,935	238	201	10,885
1985–6	620	584	14.2	1,649	2,927	8,293	12,869	517	10,313	250	160	11,240
1986–7	720	683	16.9	1,629	2,224	11,538	15,391	362	10,000	1,448	285	12,095
1987–8	470	463	16.1	3,301	2,925	7,444	13,671	223	10,800	156	154	11,333
1988–9	275	226	7.1	2,325	6,730	1,615	10,670	158	8,500	764	55	9,365
1989–90	195	163	7.5	1,307	7,260	1,215	9,782	211	8,250	1,054	0	9,144
1990–1[1]	260	253	15.1	244	6,715	3,812	10,771	247	8,800	549	0	10,771
1991–2[3]	305	292		971	5,740	4,475	11,186	263	8,800	750	0	11,186

[1] Preliminary. [2] Other disappearance represents cleaning loss, waste, and residual. [3] Forecasts. *Source: Agricultural Statistics Board, U.S.D.A.* T.235

FLAXSEED AND LINSEED OIL

U.S. Production of Flaxseed, By States In Thousands of Bushels

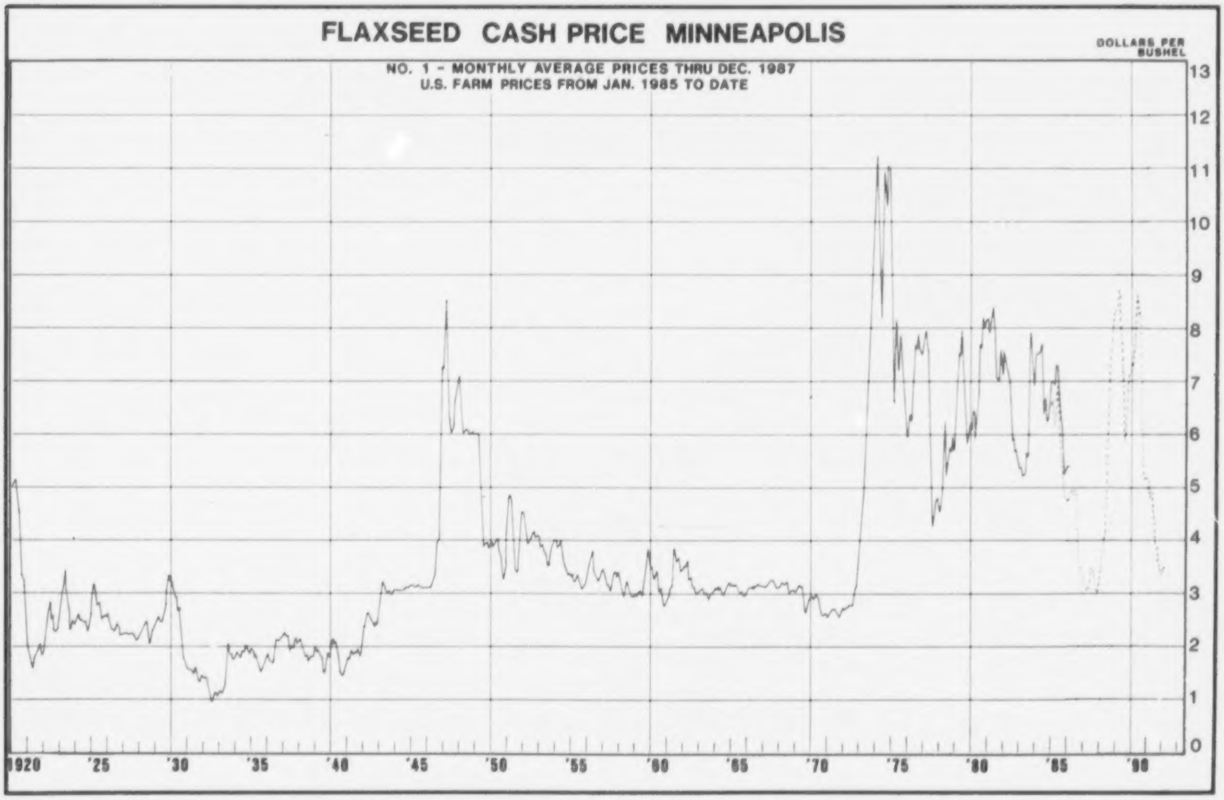
Crop Year	Minnesota	North Dakota	South Dakota	Other States	Total
1982	1,650	5,873	2,755	—	10,278
1983	938	4,600	1,365	—	6,903
1984	653	4,875	1,494	—	7,022
1985	950	6,008	1,335	—	8,293
1986	544	9,538	1,456	—	11,538
1987	224	6,518	702	—	7,444
1988	110	1,295	210	—	1,615
1989	95	980	140	—	1,215
1990[1]	238	3,118	456	—	3,812
1991[1]	540	4,860	578	122	6,100

[1] Preliminary. *Source: Agricultural Statistics Board, U.S.D.A.* T.234

Average Price Received by Farmers for Flaxseed in the U.S. In Cents Per Bushel

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average[1]
1980–1	655	702	717	710	723	759	754	748	725	735	765	747	720
1981–2	723	708	644	621	664	684	690	691	680	669	660	665	667
1982–3	625	535	537	511	495	468	486	470	460	454	469	492	517
1983–4	496	594	714	700	692	655	686	701	710	708	720	691	684
1984–5	625	607	572	567	595	605	659	664	618	667	694	654	609
1985–6	610	572	539	501	480	479	477	494	495	488	487	495	505
1986–7	439	380	369	346	339	341	318	313	304	315	335	344	347
1987–8	347	333	315	307	303	320	345	380	395	411	419	528	339
1988–9	629	719	767	785	809	834	834	870	809	778	754	679	756
1989–90	590	649	707	709	715	714	724	769	803	860	823	831	720
1990–1	756	586	536	515	516	515	512	480	490	466	433	398	532
1991–2	391	358	355	340	331	346	349						

[1] Season average includes an allowance for unredeemed loans. *Source: Agricultural Statistics Board, U.S.D.A.* T.236


FLAXSEED CASH PRICE MINNEAPOLIS

Supply and Distribution of Linseed Oil in the U.S. & World Production & Price In Millions of Pounds

Year Beginning June	Supply			Exports & Shipments	Domestic Disappearance					World Production[3] in 1,000 tonnes						Price Rotterdam Ex-Tank $ Tonne
					Drying Oil Products[4]											
	Stocks June 1	Production	Total		Paint & Varnish	Linoleum & Oilcloth	Resins & Plastics	Other Inedible	Total	Total World	Argentina	India	Japan	West Germany	U.S.	
1984–5	48	194	242	15	113.5		26.3		194	640	170	146	35	87	88	639
1985–6	33	205	238	15	131.0		29.7		184	600	112	110	36	124	93	475
1986–7	39	201	240	6	187.6				183	640	171	91	32	124	91	319
1987–8	51	217	268	10	85.5		31.0		217	620	160	109	34	79	98	441
1988–9[1]	41	170	211	11	101.6		23.1		150	520	150	116	35	48	72	716
1989–90[2]	48	165	213	12					164	560	160	116				756
1990–1[2]	37	176	213	6					167	520	145	116				502
1991–2[2]	40	176	216	10					166	520						377

[1] Preliminary. [2] Estimate. [3] Oil production calculated from assumed extraction rates. [4] For crop year beginning Oct. *Source: Economic Research Service, U.S.D.A.*

T.239

Factory Shipments of Paints, Varnish and Lacquer in the U.S. In Millions of Dollars

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	624.5	672.4	760.7	754.3	839.2	839.9	785.1	833.0	744.4	765.3	633.0	566.5	8,818
1985	630.5	621.2	754.3	865.3	930.1	880.5	862.2	864.3	805.9	820.4	673.6	571.0	9,279
1986	698.6	681.1	760.0	903.9	913.8	891.0	862.7	856.3	841.5	863.4	660.1	614.3	9,547
1987	696.7	754.6	849.5	903.2	916.0	933.0	906.6	890.8	879.6	895.4	751.7	681.3	10,168
1988	751.5	822.3	958.0	970.1	1,034.0	1,067.0	937.5	1,000.0	932.6	908.1	819.7	751.5	10,783
1989[1]	820.5	841.3	952.6	985.7	1,072.7	1,091.5	965.9	1,114.4	1019.7	995.9	914.3	755.5	11,239
1990[1]	853.2	881.1	1,020.4	1,035.1	1,076.3	1,077.2	1,032.7	1,084.3	963.1	1,046.8	854.9	730.9	11,762
1991[1]	———	2,467.8	———	———	3,122.8	———							

[1] Preliminary. *Source: Bureau of the Census*

T.246

Wholesale Price of Raw Linseed Oil at Minneapolis in Tank Cars In Cents Per Pound

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1984–5	33.4	38.0	31.0	28.8	28.5	30.0	31.2	32.0	N.A.	N.A.	N.A.	N.A.	31.6
1985–6	34.6	33.3	33.0	30.0	30.0	27.6	30.0	30.0	30.0	30.0	30.0	29.4	30.7
1986–7	29.0	29.0	29.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	26.0
1987–8	25.00	25.00	25.00	22.75	24.25	25.00	25.00	25.00	25.00	24.75	24.75	28.20	24.98
1988–9	35.00	37.00	41.50	42.00	42.00	41.50	41.00	41.00	41.40	42.00	42.00	39.75	40.51
1989–90	39.00	39.00	39.50	40.00	40.00	40.00	40.00	40.00	41.60	42.00	42.00	43.00	40.51
1990–1	44.00	40.40	39.75	36.80	36.00	36.00	36.00	36.00	36.00	36.00	36.50	36.00	37.45
1991–2													

Source: Department of Agriculture

T.240

U.S. Stocks of Linseed Oil (Crude & Refined) at Factories & Warehouses In Millions of Pounds

Year	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	April 1	May 1	June 1
1984–5	50.7	40.8	24.9	48.3	41.3	36.1	39.3	38.3	34.1	30.1	35.1	33.4
1985–6	32.7	36.9	25.4	47.0	62.3	55.2	60.6	62.7	64.6	66.0	56.1	40.1
1986–7	46.0	45.3	40.4	40.0	50.3	68.0	60.0	68.0	60.0	64.6	55.0	51.1
1987–8	52.2	45.9	40.2	52.1	54.3	50.4	50.8	56.0	39.0	35.5	35.6	40.8
1988–9	35.6	36.0	44.8	24.4	33.5	36.6	46.8	54.6	47.6	49.1	54.6	47.5
1989–90	48.4	43.8	23.2	21.5	23.9	30.3	29.9	39.5	36.7	39.1	38.3	36.8
1990–1[1]	28.3	21.8	17.1	41.8	41.4	47.5	———	74.6	———	———	76.4	———
1991–2[1]	———	60.5	———									

[1] Preliminary. *Source: Bureau of the Census*

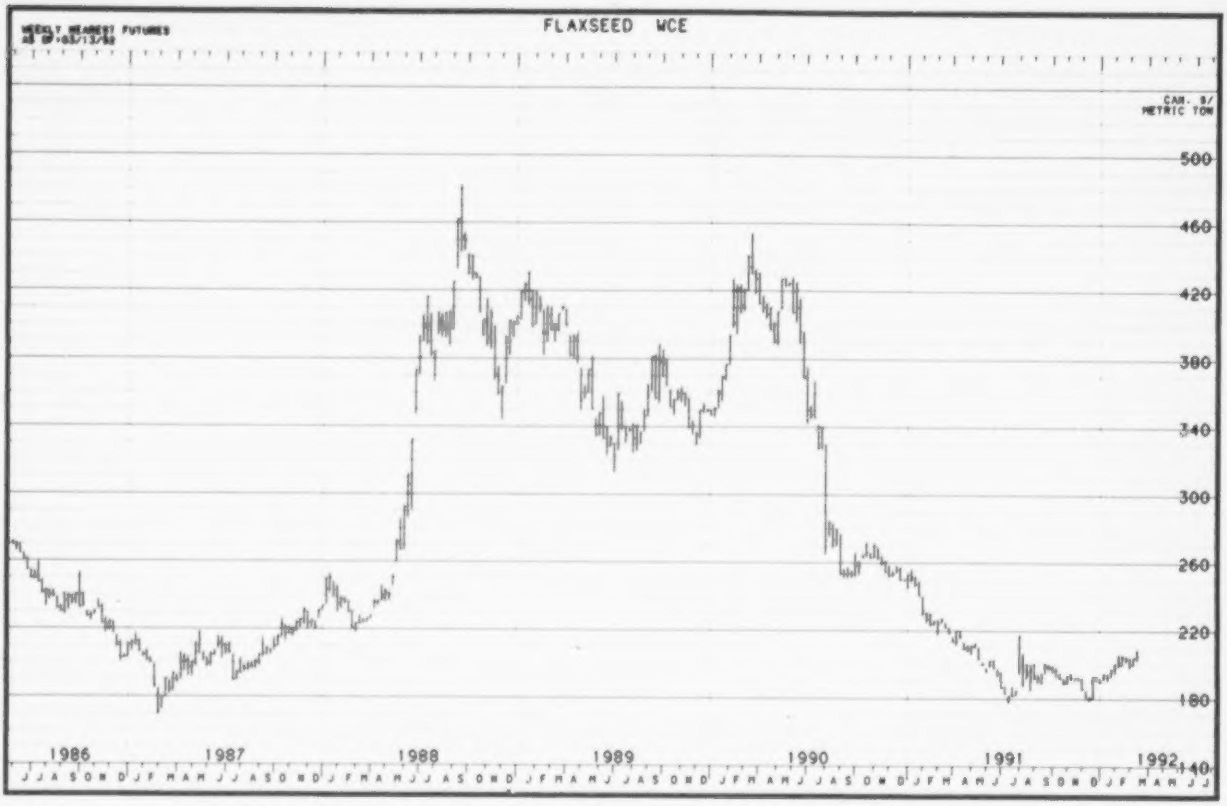
T.245

United States Linseed Oil Consumption in Inedible Products In Millions of Pounds

Crop Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1988–89	7.4	10.7	9.9	9.7	11.1	8.3	13.4	13.2	12.3	14.2	20.0	12.2	142.4
1989–90	12.2	13.6	14.5	8.7	8.7	7.5	10.3	8.6	12.8	9.7	9.6	10.0	126.2
1990–1[1]	9.5	10.2	6.8	8.3	6.3	4.7	———	19.4	———	———	24.2	———	89.4
1991–2[1]	———	29.1	———										

Source: Bureau of the Census

FLAXSEED AND LINSEED OIL



High, Low & Closing Prices of May Flaxseed Futures in Winnipeg In Canadian Dollars per Tonne

Year of Delivery		Year Prior to Delivery June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Delivery Year Jan.	Feb.	Mar.	Apr.	May	Life of Delivery Range
1988	High	237.6	235.0	218.8	230.2	244.2	246.0	242.5	260.0	244.8	233.8	245.8	285.5	285.5
	Low	231.0	214.0	214.0	217.6	227.3	228.8	231.0	236.0	224.8	223.8	231.9	236.5	214.0
	Close	234.0	217.0	218.0	228.0	230.8	242.5	239.6	241.0	226.1	230.0	241.8	275.0	—
1989	High	—	417.0	431.0	490.0	454.5	427.5	405.5	426.0	411.7	419.2	396.0	381.0	490.0
	Low	—	406.0	410.0	435.0	403.0	371.0	366.5	392.5	381.0	394.0	350.0	334.5	334.5
	Close	—	406.0	431.0	450.0	419.0	371.5	405.0	411.7	404.0	395.5	355.5	339.5	—
1990	High	353.5	362.0	360.0	388.0	382.0	369.5	359.5	379.2	409.0	426.4	417.0	428.0	428.0
	Low	335.3	339.9	341.0	369.9	352.5	344.1	346.8	347.3	374.0	394.8	388.0	389.0	335.3
	Close	346.5	339.9	360.0	378.0	362.1	349.5	350.5	379.2	396.8	407.5	389.0	428.0	—
1991	High	322.5	332.0	305.0	282.0	294.5	287.5	275.5	261.5	241.0	233.2	219.5	212.5	332.0
	Low	320.0	300.0	278.5	272.5	275.0	271.1	258.5	235.8	225.0	215.1	206.2	196.0	196.0
	Close	322.5	300.0	278.5	277.7	285.0	272.7	258.5	238.3	227.2	218.5	206.6	196.0	—

Source: Winnipeg Commodity Exchange T.243

Average Open Interest of Flaxseed Futures in Winnipeg In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	4,960	5,417	4,631	6,212	6,244	6,440	5,403	6,150	6,910	4,986	4,860	4,662
1987	4,356	4,284	4,034	5,665	6,938	6,932	6,348	6,953	7,901	5,880	5,705	5,210
1988	5,838	6,341	5,583	6,189	6,089	7,219	5,964	7,018	7,791	8,777	10,662	7,621
1989	7,864	7,875	5,422	6,038	6,479	8,297	8,609	9,234	8,191	5,120	4,613	3,349
1990	3,812	5,165	5,701	5,790	4,839	4,985	4,950	4,908	4,651	4,477	5,079	4,502
1991	4,033	4,140	4,175	4,861	4,137	4,642	5,317	6,106	6,173	5,733	5,669	5,333

Source: Winnipeg Commodity Exchange T.244

Fruits

Production of twelve major non-citrus fruits in the U.S. in 1991 amounted to 14.78 million short tons, down slightly from the previous year's 14.81 million. Output of grapes, pears, cherries, and nectarines declined, while production of apples, peaches, strawberries, cranberries, plums and prunes expanded.

Domestic citrus output was slated to increase by 2 percent in 1991/92, as higher orange and tangerine production more than offset declines in grapefruit and lemons. (See Oranges and Orange Juice section.)

The 1991 domestic apple crop was estimated at 5.06 million short tons, or 10.1 billion pounds, about 4 percent larger than the year before. Favorable growing conditions and minimal spring freeze damage led to a 21 percent hike in apple output in the eastern U.S., and production in the central states was larger. In the western states, the apple crop declined, however.

Output of grapes, the leading non-citrus crop in terms of volume, fell in 1991 as hot weather damaged California's raisin-type grape crop. The state's wine grape crop, little affected by the heat wave, increased.

Peach production in the U.S. rebounded in 1991 to 2.55 billion pounds, 15 percent above the previous crop, which was reduced by a spring freeze. The 1991 pear crop, hurt by freezing temperatures on the Pacific Coast in December 1990, was down 8 percent from the year before.

U.S. exports of apples, pears, and peaches have grown rapidly since the mid-1980s. Apple shipments overseas were expected to be a record in 1991/92 because of a smaller 1991 European apple crop and more liberalized trade policies in the Pacific Rim. The Philippines, Indonesia, and Thailand, having reduced trade barriers, were growing markets for U.S. apples, while Canada and Taiwan remained the top customers, taking about 40 percent of all apple shipments.

U.S. pear exports were expected to increase by at least 5 percent in 1991/92 from the previous season's 217 million pounds, because of market promotion and more liberalized trade policies in some importing countries. More than a third of U.S. pear exports go to Canada, and Mexico has become an increasingly important customer.

The USDA's index of U.S. grower prices for all fruit (based on 1977=100 percent) reached a record 398 percent in June 1991. Rising citrus prices accounted for the strength, however. Non-citrus fruit prices declined during the first half of 1991.

U.S. Commercial Production For Selected Fruits In Thousands of Short Tons

Year	Apples	Cherries[2]	Cranberries	Grapes	Grapefruit[3]	Lemons[3]	Nectarines	Oranges[3]	Peaches	Pears	Pineapples	Prunes & Plums	Strawberries	Tangelos[3]	Tangerines[3]	Total All Fruits
1986	3,930	250	185	5,228	2,352	692	172	7,476	1,153	767	646	491	510	133	196	24,909
1987	5,371	395	170	5,267	2,586	1,087	191	7,697	1,191	938	692	977	559	180	228	28,240
1988	4,564	304	204	6,034	2,801	785	200	8,551	1,307	861	659	738	590	189	218	28,699
1989	4,981	326	187	5,931	2,844	759	200	8,949	1,167	917	580	1,018	571	171	239	29,507
1990[1]	4,848	261	172	5,660	1,981	706	211	7,727	1,103	964	575	733	629	132	164	26,417
1991																

[1] Preliminary. [2] Sweet & Tart. [3] Year Harvest was complete. *Source: Economic Research Service, U.S.D.A.*

U.S. Utilized Production & Value of Fruits

	Utilized Production In Thousand Short Tons			Value of Production In Million Dollars		
	Citrus[1]	Noncitrus[2]	Total	Citrus[1]	Noncitrus[2]	Total
1986	11,058	13,874	24,932	1,768	4,204	5,972
1987	11,993	16,011	28,004	2,053	4,421	6,474
1988	12,761	15,893	28,654	2,619	5,097	7,715
1989	13,186	16,335	29,521	2,665	5,276	7,941
1990[3]	10,845	15,605	26,450	2,208	5,470	7,678

[1] Year Harvest was complete. [2] Includes Cranberries & Strawberries, but excludes other Bushberries. [3] Preliminary. *Source: Economic Research Service, U.S.D.A.*

U.S. Annual-Average Retail Prices for Selected Fruits: Dollars per Pound

Year	Red delicious apples	Bananas	Anjou pears	Thompson Seedless grapes	Lemons	Grapefruit	Oranges Navel	Oranges Valencias
1986	.773	.385	.768	1.140	.821	.509	.481	.463
1987	.728	.365	.745	1.173	.897	.518	.543	.578
1988	.729	.418	.628	1.163	.933	.517	.528	.585
1989	.688	.449	.733	1.205	.995	.525	.516	.599
1990	.719	.463	.763	1.256	1.074	.657	.570	.558

Source: Bureau of Labor Statistics, Department of Labor

FRUITS

U.S. Utilization of Noncitrus Fruit Production, and Value, United States 1,000 Short Tons (fresh equivalent)

Year	Utilized production	Fresh	Processed						Value of utilized production 1,000 dollars
			Canned	Dried	Juice	Frozen	Wine	Other	
1985	13,682	4,749	2,119	2,192	1,226	263	2,921	212	3,380,152
1986	13,365	4,896	2,211	1,668	1,135	286	2,909	259	3,699,956
1987	15,453	5,553	2,369	2,367	1,893	306	2,647	317	3,868,619
1988	15,303	5,465	2,374	2,546	1,372	296	2,983	267	4,552,348
1989	15,764	5,662	2,266	2,857	1,547	341	2,869	222	4,738,426
1990[1]	14,976	5,467	2,331	2,431	1,532	316	2,717	184	4,876,380
1991									

[1] Preliminary. *Source: National Agricultural Statistics Service, USDA*

U.S. Average Price Indexes for Fruits

Year	Index of all fruit prices received by growers	Producer Price Index				Consumer Price Index	
		Fresh fruit	Dried fruit	Canned fruits and juices	Frozen fruits and juices	Fresh fruit	Processed fruit
	(1977 = 100)	—1982 = 100—				—1982–84 = 100—	
1985	180	108.1	88.7	113.8	118.5	116.3	109.5
1986	169	112.9	91.9	111.0	103.0	118.7	106.3
1987	182	112.0	95.0	115.4	113.3	132.0	110.6
1988	185	112.8	98.9	120.3	130.0	143.0	121.9
1989	192	110.4	103.1	122.6	124.5	152.4	125.9
1990	192	116.1	107.0	126.9	138.9	170.9	136.6

Sources: National Agricultural Statistics Service, USDA and Bureau of Labor Statistics, Department of Labor

U.S. Fresh Fruit: Per Capita Consumption[1] in Pounds

Year	Citrus fruit							Noncitrus fruit					
	Oranges	Tangerines	Tangelos	Lemons	Limes	Grapefruit	Total[4]	Apples	Apricots	Avocados	Bananas	Cherries	Cranberries
1985	12.31	0.94	0.55	2.36	0.66	5.82	22.64	17.52	0.16	1.88	23.49	0.43	0.13
1986	14.53	1.10	0.50	2.54	0.71	6.59	25.97	18.16	0.10	1.58	25.83	0.49	0.14
1987	14.01	1.28	0.49	2.58	0.65	6.75	25.76	21.34	0.08	2.38	25.03	0.73	0.13
1988	14.68	1.26	0.51	2.54	0.68	6.76	26.43	19.97	0.10	1.64	24.29	0.51	0.11
1989	13.41	1.21	0.49	2.58	0.80	6.88	25.37	21.57	0.09	1.44	24.70	0.54	0.20
1990[5]	13.38	0.95	0.40	2.46	0.74	4.47	22.40	19.80	0.17	1.08	24.36	0.40	0.11
1991													

N.A. = Not available. [1] All data are on calendar-year basis except for citrus fruits, October or November; apples, August; grapes and pears, July; prior to years indicated. [2] Reported separately beginning 1983. [3] Includes olives, persimmons, pomegranates (until 1990), kiwifruit (until 1983), and other fruit. [4] Some figures may not add due to rounding. [5] Preliminary. *Source: Commodity Economics Division, ERS, USDA*

U.S. Fresh Fruit: Per Capita Consumption[1] in Pounds

Year	Noncitrus-continued												
	Figs	Grapes	Kiwifruit[2]	Mangos	Nectarines	Peaches	Pears	Pineapples	Papaya	Plums and prunes	Straw-berries	Miscellaneous fruit[3]	Total noncitrus[4]	Total fruit[4]
1985	0.01	7.48	0.18	0.40	1.68	4.01	2.85	1.49	0.18	1.54	3.10	0.17	66.70	89.34
1986	0.01	7.31	0.21	0.48	1.36	4.65	3.06	1.75	0.18	1.37	3.02	0.14	69.84	95.81
1987	0.01	7.68	0.28	0.55	1.51	4.73	3.64	1.71	0.19	2.06	3.25	0.11	75.41	101.17
1988	0.01	8.16	0.27	0.37	1.54	5.11	3.28	1.82	0.16	1.77	3.53	0.07	72.71	99.14
1989	0.01	8.44	0.39	0.42	1.47	4.23	3.36	2.04	0.14	1.57	3.46	0.21	74.28	99.65
1990[5]	0.01	7.80	0.50	N.A.	1.50	3.73	3.24	2.08	0.18	1.54	3.26	N.A.	69.76	92.16
1991														

N.A. = Not available. [1] All data are on calendar-year basis except for citrus fruits, October or November; apples, August; grapes and pears, July; prior to years indicated. [2] Reported separately beginning 1983. [3] Includes olives, persimmons, pomegranates (until 1990), kiwifruit (until 1983), and other fruit. [4] Some figures may not add due to rounding. [5] Preliminary. *Source: Commodity Economics Division, ERS, USDA*

Gas

U.S. natural gas consumption in 1991 was expected to fall to 18.68 trillion cubic feet (tcf) from 18.72 trillion the previous year, due to mild weather during late 1991 and the effects of the recession on industrial use. However, natural gas demand was forecast to rise by 5.1 percent in 1992 to 19.63 tcf, the highest annual use since 1981, as the economy was due to recover.

Prices were depressed through most of 1991. Gas utility companies, called local distribution companies or LDCs by the trade, had filled storage after Iraq invaded Kuwait in August 1990. Since the Gulf War did not significantly reduce petroleum supplies, despite the loss of Iraqi and Kuwaiti output, gas companies were left with expensive inventories in January. A warmer-than-usual winter limited residential use to 4.5 tcf, up 2.5 percent from 4.39 tcf in 1990. Commercial and industrial use was down. Producers selling into the market to raise cash allowed the LDCs to fill their underground storage facilities at prices as low as $1.05/MMBtu (one million Btu) during the summer of 1991. As a result, inventories were close to all-time highs when the 1991/92 heating season began in November. Several producers announced that they were shutting in production in the fall, but the market resumed its sell-off in November.

In December, the Iroquois pipeline, which brings Canadian gas across New York to Long Island, began operating over its northern portion. Plans were already under way to expand its capacity from 576 million cubic feet (MMcf) a day to 661 MMcf, with much of the gas intended for the New England markets.

Futures Market

Natural gas futures are traded on the New York Mercantile Exchange, which was planning to introduce options on natural gas futures in 1992.

World Natural Gas Production (Marketed Production[3]) In Thousands of Terajoule[4]

Year	Argentina	Canada	China	France	Indonesia	Germany	Iran	Italy	Mexico	Netherlands	Poland	Romania	United Kingdom	United States	USSR	Venezuela	Australia
1978	256	2,856	535	307	353	720	668	524	701	3,048	244	1,475	1,458	18,846	12,967	528	274
1979	303	3,041	566	303	482	729	700	581	832	3,100	224	1,409	1,470	19,415	14,160	601	303
1980	327	2,790	558	289	607	632	279	476	1,036	3,012	193	1,455	1,379	19,256	15,168	643	351
1981	340	2,748	496	277	653	673	247	533	1,033	2,975	187	1,532	1,374	19,057	16,215	647	406
1982	393	2,825	464	257	646	580	326	583	1,638	2,533	167	1,549	1,483	17,655	17,414	682	432
1983	457	2,740	475	297	773	635	326	495	1,452	2,691	193	1,537	1,527	15,986	18,638	668	443
1984	478	2,972	478	247	940	617	511	525	1,112	2,717	190	1,526	1,494	17,341	20,469	741	470
1985	509	3,189	502	217	937	584	557	539	1,068	2,839	200	1,522	1,665	16,365	22,149	727	613
1986	553	2,988	547	165	1,120	465	580	541	985	2,551	183	1,346	1,747	15,974	23,698	805	571
1987	657	3,254	541	206	1,080	582	622	618	991	2,350	180	1,277	1,681	16,488	25,295	799	588
1988	775	3,763	556	174	1,220	544	780	627	984	2,079	179	1,236	1,617	16,943	26,212	809	603
1989[1]	785	3,981	586	165	1,215	537	866	658	984	2,270	169	1,108	1,724	17,177	25,843	792	621
1990[2]		4,088	593	123		530		643	1,017	2,286	121		1,768	17,480	27,580		704

[1] Preliminary. [2] Estimate. [3] Comprises all gas collected & utilized as fuel or as a chemical industry raw material, including gas used in oilfields and/or gasfields as a fuel by producers. [4] Terajoule = 10^{12} Joule = approx. 10^{9} BTU. *Source: United Nations* T.247

United States Recoverable Reserves and Deliveries of Natural Gas In Billions of Cubic Feet

Year	Recoverable Reserves of Natural Gas Dec. 31[3]	Deliveries							Heating Value BTU per Cubic Foot
		Residential	Commercial	Lease & Plant Fuel	Used as Pipeline Fuel	Industrial	Total Deliveries	Electric Utility Plants[2]	
1978	200,302	4,903	2,601	1,648	530	6,757	17,449	3,188	
1979	200,987	4,965	2,786	1,499	601	6,899	18,141	3,491	
1980	199,021	4,752	2,611	1,026	635	7,172	18,216	3,682	1,026
1981	201,730	4,546	2,520	928	642	7,128	17,834	3,640	1,027
1982	201,512	4,633	2,606	1,109	596	5,831	16,295	3,226	1,028
1983	200,247	4,381	2,433	978	490	5,643	15,367	2,911	1,031
1984	197,463	4,555	2,524	1,077	529	6,154	16,345	3,111	1,031
1985	193,369	4,433	2,432	966	504	5,901	15,811	3,044	1,032
1986	191,586	4,314	2,318	923	485	5,579	14,814	2,602	1,030
1987	187,211	4,315	2,430	1,149	519	5,953	15,542	2,844	1,031
1988	168,024	4,630	2,670	1,096	614	6,383	16,320	2,636	1,029
1989	167,116	4,781	2,718	1,070	629	6,816	17,102	2,787	1,031
1990[1]	169,346	4,391	2,680	1,231	660	6,970	16,826	2,786	1,031
1991[4]		4,117	2,630	1,233	750	6,981	16,640	2,712	1,035

[1] Preliminary. [2] Figures include gas other than natural (impossible to segregate); therefore, shown separately from other consumption. [3] Estimated proved recoverable reserves of dry natural gas. [4] Estimated. *Source: U.S. Dept. of Energy* T.251

Gas Utility Sales in the United States by Types & Class of Service In Trillions of BTU's

			Class of Service					Revenue—Mil. $ From Sales to Customers					
Year	Total Utility Sales	Number of Cust. (Mil.)	Residential	Commercial	Industrial	Electric Generation	Other	Total	Residential	Commercial	Industrial	Electric Generation	Other
1978	14,748	46.0	5,107	2,500	6,932		211	32,150	12,939	5,696	13,139		377
1979	15,440	46.7	5,083	2,486	7,641		230	38,947	14,833	6,624	17,045		446
1980	15,413	47.4	4,826	2,453	7,957		177	48,303	17,432	8,183	22,215		473
1981	15,375	48.1	4,610	2,375	8,239		150	56,110	19,180	9,286	27,124		520
1982	14,183	48.5	4,770	2,471	6,794		147	63,200	23,700	11,666	27,200		634
1983	12,858	48.9	4,450	2,298	5,970		140	65,837	26,173	12,659	26,315		690
1984	13,162	49.5	4,628	2,396	5,991		146	67,496	27,485	13,205	26,093		713
1985	12,612	50.2	4,513	2,338	3,686	1,949	130	63,293	26,864	12,723	15,659	7,428	620
1986	11,125	50.9	4,381	2,239	2,890	1,449	167	51,201	24,759	11,274	10,546	3,949	673
1987	10,543	51.8	4,385	2,156	2,541	1,306	155	45,492	23,622	10,271	7,500	3,569	530
1988	10,691	52.7	4,692	2,304	2,204	1,331	160	46,109	24,812	10,670	6,702	3,387	539
1989[1]	10,551	53.7	4,798	2,323	1,962	1,280	188	47,493	26,172	11,077	6,211	3,449	584
1990[2]	9,846	54.4	4,394	2,192	1,997	1,075	188	44,672	24,658	10,462	6,064	2,889	598

[1] Preliminary. [2] Estimate. *Source: American Gas Association* T.253

Salient Statistics of Natural Gas in the United States

	In Billions of Cubic Feet										Average Price Delivered to Consumers $ Per Ths. Cu. Ft.						
	Supply				Disposition												
Year	Marketed Production	Storage Withdrawals	Import (Consumed)	Total Supply	Consumption	Exports	Stored	Extraction Loss	Unaccounted For	Total Disposition	Wellhead Price	Imports	Exports	Residential	Commercial	Industrial	Electric Utilities
1977	20,025	1,750	1,011	21,924	19,521	56	2,307	863	41	22,786	.79	N.A.		2.35	2.04	1.50	1.32
1978	19,974	2,158	966	22,245	19,627	53	2,278	852	287	23,097	.91	2.21		2.56	2.23	1.70	1.48
1979	20,471	2,047	1,253	22,964	20,241	56	2,295	808	372	23,772	1.18	2.60		2.98	2.73	1.99	1.81
1980	20,180	1,972	985	22,515	19,877	49	1,949	777	640	23,292	1.59	4.28	4.70	3.68	3.39	2.56	2.27
1981	19,956	1,930	904	22,191	19,404	59	2,228	775	501	22,967	1.98	4.88	5.90	4.29	4.00	3.14	2.89
1982	18,520	2,165	933	21,000	18,001	52	2,472	762	475	21,762	2.46	5.03	5.81	5.17	4.82	3.87	3.48
1983	16,822	2,270	920	19,354	16,835	55	1,822	790	642	20,144	2.59	4.78	5.10	6.06	5.59	4.18	3.58
1984	18,230	2,098	843	20,443	17,951	55	2,295	838	143	20,443	2.66	4.08	4.92	6.12	5.55	4.22	3.70
1985	17,198	2,397	950	19,855	17,281	55	2,163	816	356	19,855	2.51	3.19	4.77	6.12	5.50	3.95	3.55
1986	16,791	1,837	750	18,692	16,221	61	1,984	800	427	18,692	1.94	2.53	2.81	5.83	5.08	3.23	2.43
1987	17,349	1,905	993	19,534	17,211	54	1,911	812	359	19,534	1.67	2.17	3.07	5.54	4.77	2.94	2.32
1988	17,918	2,270	1,294	20,691	18,030	74	2,211	816	376	20,691	1.69	2.00	2.73	5.47	4.63	2.95	2.33
1989	18,095	2,854	1,382	21,586	18,800	107	2,528	785	27	21,435	1.69	2.04	2.51	5.64	4.74	2.96	2.43
1990[1]	18,594	2,002	1,532	21,026	18,721	86	2,517	764	−398	21,323	1.71	2.03		5.80	4.82	2.93	2.38
1991[2]	18,675	2,369	1,614		19,739	89	2,287	823									

[1] Preliminary. [2] Estimate. [3] Total value of market production at the wellhead. *Source: U.S. Dept. of Energy* T.248

United States Marketed Production[1] of Natural Gas In Billions of Cubic Feet

Year	Alaska	Arkansas	California	Colorado	Kansas	Louisiana	Michigan	Mississippi	Montana	New Mexico	Ohio	Oklahoma	Pennsylvania	Texas	West Virginia	Wyoming
1977	188	104	311		781	7,215	130	83	47	1,203	99	1,770	92	7,051	153	330
1978	203	107	311		854	7,476	148	107	47	1,174	114	1,774	98	6,548	149	357
1979	221	109	248		798	7,266	160	144	54	1,181	123	1,835	96	7,175	151	414
1980	231	112	310		735	6,639	159	175	52	1,150	139	1,892	97	7,116	157	410
1981	243	93	381		640	6,780	153	181	59	1,134	141	2,019	122	6,910	151	425
1982	264	125	384		430	6,172	153	167	57	991	138	1,934	121	6,469	151	425
1983	277	128	415		435	5,332	139	151	52	895	151	1,730	118	5,939	130	444
1984	289	135	476	173	466	5,825	145	158	51	957	186	1,986	166	6,185	144	517
1985	321	155	491	178	513	5,014	132	144	52	905	182	1,936	150	6,053	145	417
1986	305	131	462	164	466	4,895	127	141	47	703	182	1,917	160	6,152	135	403
1987	360	141	425	165	457	5,123	147	140	46	824	167	2,005	163	6,126	160	498
1988	379	167	400	192	593	5,180	146	124	52	792	167	2,167	167	6,286	175	509
1989	394	174	363	217	601	5,078	156	103	51	855	160	2,237	192	6,241	177	666
1990[2]	403	175	363	243	574	5,242	140	95	50	965	155	2,258	178	6,343	178	736

[1] Comprises gas either sold or consumed by producers, including losses in transmission, quantities added to storage and increases of gas in pipelines. [2] Preliminary. *Source: U.S. Dept. of Energy* T.250

Gasoline

U.S. gasoline demand fell by 0.7 percent in 1991 to 7.19 million barrels per day (bpd), according to the Department of Energy. The lingering effects of the 1990/91 recession reduced the growth in highway travel, and consumption fell because of increases in motor vehicle efficiency. Miles traveled per car were expected to be no more than 1 percent higher than the previous year's 10,556, but fuel efficiency was expected to rise 1.3 percent from the 1990 average of 20.92 miles per gallon. For 1991, a projected efficiency increase of 2.4 percent was expected to more than offset a 2.1 percent rise in miles traveled.

The DOE noted that wide swings in secondary gasoline stocks--those held by jobbers and wholesalers--complicated interpretation of the gasoline demand and efficiency data. It was believed that a two-year downtrend in secondary stocks may have been reversed early in 1991. The increase most likely resulted from hoarding ahead of the Gulf War. Regardless of the reason, the replenishment could mean that declines in actual consumption were larger than implied by the gasoline deliveries data.

The decline in gasoline prices that followed the Gulf War reduced unleaded regular's market share from a record 71 percent in October 1990 to 67 percent in July 1991. The retail price of unleaded regular, including taxes, averaged 114 cents/gallon in 1991, compared with 116.4 cents in 1990. Unleaded premium's market share rebounded to 19 percent by July from its January low of 17 percent; however, premium had 23 percent of the market prior to Iraq's August 1990 invasion of Kuwait. Some of premium's share migrated to midgrade blends, which held a record market share of 10.3 percent in July. Leaded regular's share continued to hold just above 3 percent of the domestic market.

The average retail price of gasoline for all grades and services fell 1.7 percent in 1991 to 119.6 cents/gallon. The decline would have been larger if not for the five-cent federal gasoline tax increase that went into effect on December 1, 1990. The average retail price for unleaded premium fell by 2.1 percent to 132.1 cents from 134.9 cents in 1990.

There were 184 operating refineries in the U.S. in 1991, down 10 from 1990. But crude distillation capacity increased to 15.676 million bpd from 15.571 million because of capital investments at the remaining refineries. No major additions to domestic refining capacity were expected in 1992 because of the uncertainties created by the 1990 Clean Air Act. In early 1992, there were between 20 and 30 refineries facing sale or closure because of the Clean Air Act.

By November 1992, winter gasoline sold in at least 39 areas classified as violating carbon monoxide standards was to contain at least 2.7 percent oxygen by weight. Previously, gasoline had contained about 0.4 percent oxygen. The main oxygenate was expected to be methyl tertiary butyl ether, commonly called MTBE. Most MTBE is produced by refineries for internal use as a gasoline blendstock because of its low volatility and high octane characteristics. MTBE capacity in 1990 was fully utilized. Planned capacity additions in 1991 and 1992 were expected to increase supplies by no more than 124,000 bpd. However, seasonal demand was expected to rise by between 128,000 and 179,000 bpd.

Futures Markets

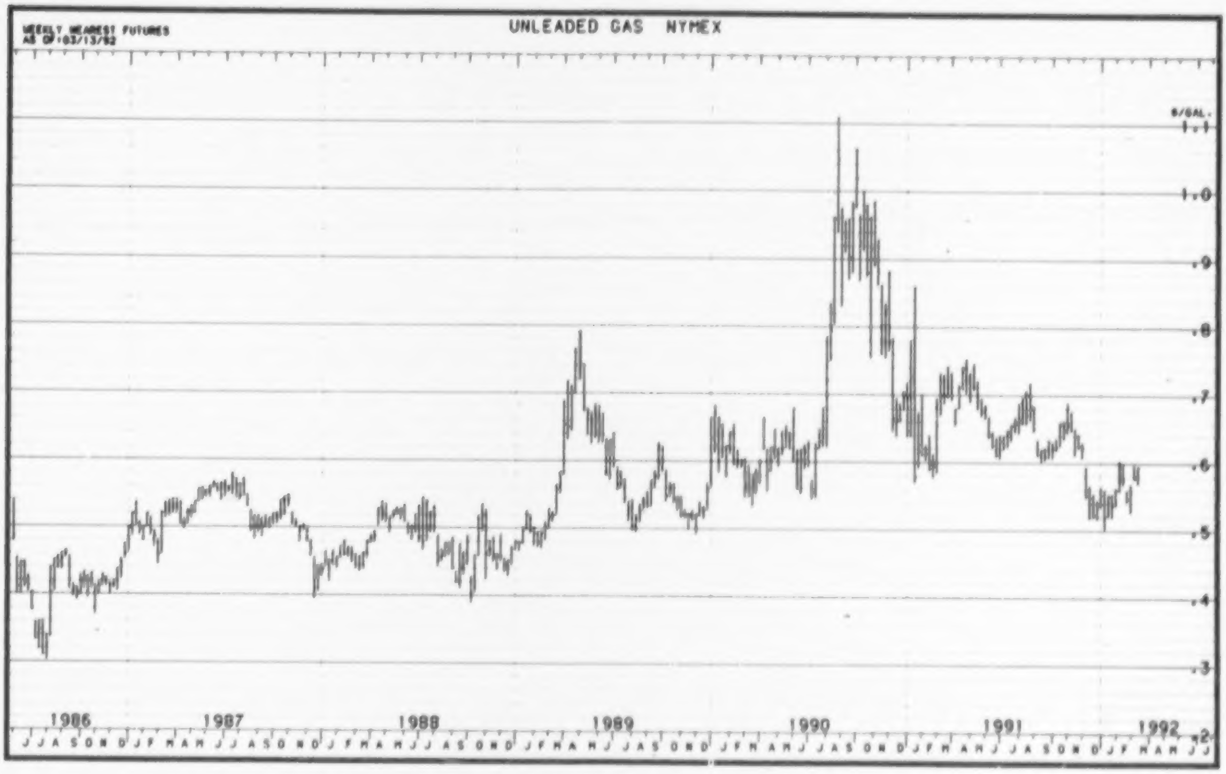
Unleaded regular futures and options on those futures are traded on the New York Mercantile Exchange.

High, Low & Closing Prices of December Unleaded Regular Gasoline Futures In N.Y. In ¢ Per Gallon

Year of Delivery	Yr. Prior to Delivery			Delivery Year[1]											Delivery Range
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[1]	
1987 High	—	—	51.00	51.25	50.75	50.40	50.80	51.50	54.00	56.25	55.92	50.90	53.50	52.15	56.25
Low	—	—	49.25	48.65	45.90	46.70	47.70	49.30	51.00	52.86	47.10	48.10	50.10	47.85	45.90
Close	—	—	51.00	51.00	45.90	50.25	49.30	51.30	53.55	53.92	49.80	50.46	52.46	49.31	—
1988 High	—	—	—	—	—	—	48.80	47.70	47.70	44.80	43.90	42.16	46.92	49.70	49.70
Low	—	—	—	—	—	—	46.40	45.30	41.50	40.70	40.90	38.00	36.00	42.40	36.00
Close	—	—	—	—	—	—	46.80	47.38	41.53	43.68	41.80	38.74	44.33	49.05	—
1989 High	—	—	—	—	—	53.90	53.60	51.20	51.70	50.60	51.30	56.75	56.20	53.55	56.75
Low	—	—	—	—	—	45.90	47.00	47.20	46.30	47.60	46.70	50.80	52.10	49.30	45.90
Close	—	—	—	—	—	49.10	49.90	49.77	48.60	48.50	51.12	55.73	52.94	50.29	—
1990 High	48.95	49.95	54.05	56.60	56.30	55.50	56.00	55.20	53.50	58.85	90.18	98.75	98.10	93.00	98.75
Low	48.60	48.20	49.85	49.85	51.65	53.10	51.00	52.95	49.80	49.15	58.55	76.52	75.25	75.40	47.55
Close	48.95	49.50	54.05	52.55	54.90	54.85	53.65	53.00	50.55	58.50	75.07	96.39	90.15	77.58	—
1991 High	78.95	70.55	67.55	65.40	51.15	54.50	58.00	58.70	58.25	59.50	62.25	61.30	65.50	67.60	78.95
Low	62.45	64.55	58.05	49.25	46.90	50.50	52.75	56.00	54.55	55.60	57.85	57.95	60.00	61.10	49.25
Close	70.80	66.35	64.15	50.35	50.30	53.60	55.95	57.82	55.85	59.11	60.28	60.59	64.53	62.29	—
1992 High						54.80									
Low						52.50									
Close						54.83									

[1] Contract expires the last business day of the previous calendar month quoted. *Source: N.Y. Mercantile Exchange* T.0575A

GASOLINE



Average Open Interest of Unleaded Regular Gasoline Futures In New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	28,026	32,240	41,440	40,630	37,152	32,453	28,977	27,463	27,522	29,271	31,998	38,327
1988	39,887	43,055	44,006	46,094	46,517	50,754	57,897	51,064	49,636	49,649	49,877	50,893
1989	55,838	57,011	59,012	69,547	68,478	61,519	56,913	52,158	51,910	55,312	65,392	71,464
1990	77,580	80,425	75,368	71,132	62,121	72,105	68,826	59,528	60,558	61,253	56,332	56,569
1991	54,807	75,337	81,393	74,801	71,900	73,633	74,503	87,073	90,680	100,606	111,745	
1992												

Source: N.Y. Mercantile Exchange T.0576

Volume of Trading of Unleaded Regular Gasoline Futures in New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1987	135,208	139,885	211,590	214,982	178,735	175,585	182,661	154,685	155,352	166,365	152,176	190,014	2,056,238
1988	196,616	191,231	245,019	217,139	257,507	330,009	401,196	254,010	294,512	355,982	308,438	240,366	3,292,055
1989	354,167	258,669	373,936	510,964	407,445	443,205	356,939	310,546	412,753	375,489	328,277	352,168	4,484,558
1990	540,633	349,439	461,438	481,665	527,637	472,377	456,342	549,702	373,102	386,472	314,051	248,137	5,205,995
1991	366,772	351,188	525,432	541,073	482,943	446,350	396,429	562,085	386,421	477,111	529,171	529,940	5,594,915
1992	565,922	558,476	604,678										

Source: N.Y. Mercantile Exchange T.0576A

Refiner Sales Prices of Finished Motor Gasoline to End Users (Excluding Taxes) ¢ per Gallon

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	89.3	80.5	65.4	59.1	63.8	64.9	58.0	55.5	56.2	53.2	53.2	54.2	62.4
1987	59.7	62.1	62.7	64.9	66.3	67.7	69.6	71.6	70.5	69.7	69.4	67.4	66.9
1988	64.9	63.3	62.5	66.0	68.4	68.1	69.9	71.8	70.0	68.0	67.6	66.1	67.3
1989	65.6	66.1	68.4	81.7	85.5	84.5	82.0	76.6	74.9	74.7	72.7	72.1	75.6
1990[2]	78.8	76.5	75.1	77.9	80.2	81.5	80.8	92.4	101.2	108.7	107.2	98.4	88.3
1991[2]	88.7	79.6	74.1	77.1	82.1	81.9	79.0	81.2	80.2	78.2	79.1	75.9	79.7

[1] Excludes aviation. [2] Preliminary. *Source: Bureau of Labor Statistics Energy Inform. Administration* T.498

Gold

Gold remained out of favor as an investment and as a store of value in 1991, despite cataclysmic events that once would have made prices explode. Neither the Gulf war, unrest in South Africa, nor the collapse and year-end dissolution of the Soviet Union could shock gold out of its lethargy.

Basis the London P.M. Fix, gold ended 1991 at $353.60/oz., down 9.6 percent from $391 a year earlier. Spot bullion prices ranged from a high of $404.35 at the start of the Gulf war in mid-January to a five-year low of $344.25 in mid-September. Rumors that massive gold sales had almost depleted the USSR's gold stocks prior to the August 1991 hard-line coup circulated in late September, briefly pushing prices back above $370. Soviet mining statistics were state secrets, but it was believed that the USSR was the world's second-largest gold producer, after South Africa, until the U.S. moved into second place in 1990.

The Bureau of Mines estimated 1991 world mine production at 2,060 tonnes (about 66.23 million ounces), up 0.5 percent from 2,050 tonnes (65.91 million ounces) in 1990. South African output fell modestly to 19.29 million ounces from 19.39 million in 1990, while U.S. mine production rose 3.4 percent to 9.65 millon ounces. The BOM estimated the former USSR's production at 220 tonnes (7.07 million ounces), down 12 percent from 250 tonnes (8.04 million ounces) in 1990. However, *Izvestia*, formerly the official Soviet newspaper, reported that the former USSR produced 304 tonnes in 1991 (9.77 million ounces).

Izvestia also reported that the USSR exported 16.08 million ounces of gold in 1991, up 25 percent from 1990. Some of that may have backed an estimated 3.5 million ounces in gold loans, for which bullion was pawned at either London or Swiss banks. In October, two economists in the Gorbachev Administration said that the country's official gold reserves had dwindled to 240 tonnes (7.7 million ounces). The figure was widely circulated and doubted, since Gosbank, the former USSR's central bank, had just reported its monetary reserves at 375 tonnes (12.1 million ounces). It was believed that much of the former USSR's reserves, which had been estimated at between 1,500 and 3,000 tonnes (48.2 million to 96.5 million ounces) had disappeared into secret Communist Party accounts.

U.S. primary refinery production of gold fell 7.3 percent in 1991 to 6.1 million ounces. Secondary output, including tolled gold, also was 6.1 million ounces, up 13 percent from 1990; 30 percent of that was old scrap and 70 percent prompt industrial scrap. Reported U.S. industrial use was 3.2 million ounces, versus 3.3 million in 1990. Jewelry and the arts accounted for 66 percent of 1991 fabrication demand. Industrial uses, mainly electronic, took 25 percent, and dental uses 9 percent.

Apparent gold demand in the U.S., including changes in investor holdings, was estimated to have risen 23 percent to 8.4 million ounces. Some of the apparent increase in gold hoarding was involuntary inventory building.

It was likely that much of the jewelry made in 1991 was not sold because of the lingering effects of the recession. A major U.S. jewelry store chain closed 400 stores after Christmas. In the U.K., the weight of gold hallmarked fell 17.4 percent to 78.5 million grams. The U.S. and the European Community lifted bans on importation of South African gold coins in 1991, but that market has been taken over by other bullion coins, ranging from the American Eagle to Australia's kangaroo-faced Nuggets. In March, Australia introduced a one-kilogram bullion coin, believed to be the largest legal-tender coin produced in this century, with a face value of A$10,000.

Futures Markets

Gold futures and options on those futures are traded on the New York Commodity Exchange (COMEX). Exchanges in Chicago, Tokyo, Sydney and Hong Kong also trade gold futures.

World Mine Production of Gold In Thousands of Kilograms (1 kilogram = 32.1507 troy oz.)

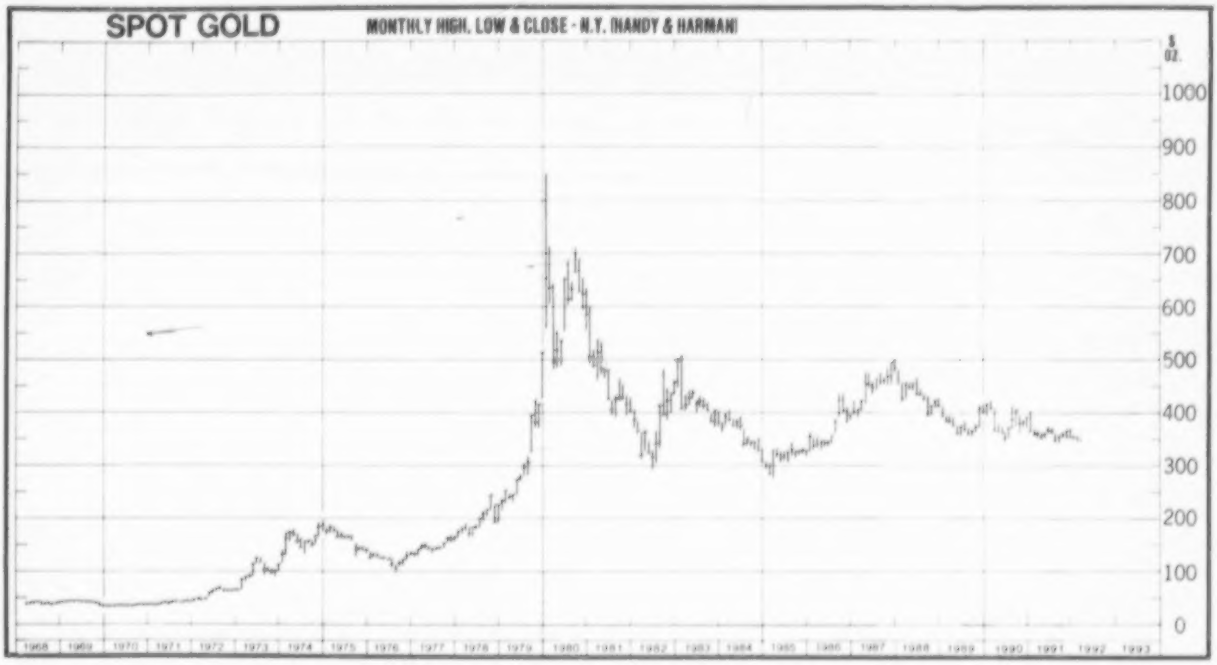
Year	Australia	Brazil	Canada	China	Colombia	Ghana	India	Japan	Mexico	Maylaysia	Papua N. Guinea	Philippines	Zimbabwe	South Africa	United States	USSR[1]	Total World
1988	157.0	108.5	128.0	87.0	29.0	12.0	2.1	7.3	9.1	3.0	32.8	30.5	14.8	617.8	205.3	295.5	1,862
1989	202.9	97.0	158.4	87.0	30.0	12.8	2.0	6.1	8.7	2.9	33.7	30.6	16.0	606.2	259.1	289.2	1,940
1990[2]	208	107.0	171.5	93.0	30.6	17.8	2.2	6.1	8.4	2.9	42.6	33.0	16.0	605.9	300.5	299.0	2,083
1991[2]	200	139.0	194.0	107.0	27.9	17.5	2.6	6.9	8.4	3.0	50.0	35.8	14.8	643.0	300.0	317.3	2,203

[1] Estimated. [2] Preliminary. *Source: U.S. Bureau of Mines* T.258

U.S. Mine Production of Recoverable Gold In Kilograms (1 kilogram = 32.1507 troy oz.)

Year	Alaska	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	South Dakota	Utah	Other States	Total U.S.
1988	4,210	4,549	22,442	5,126	3,218	9,175	114,322	[2]	13,981	[2]	23,891	200,914
1989	5,756	2,810	29,804	3,448	3,057	11,623	154,573	1,076	16,123	[2]	37,271	265,541
1990[1]	3,232	5,000	29,607	2,338	2,500	13,012	176,551	60,462				290,202
1991[3]	[2]	4,800	28,086	[2]	2,463	11,239	155,749	49,021				251,358

[1] Preliminary. [2] Included in "Other States." [3] Estimate. *Source: Bureau of Mines* T.262



Salient U.S. Gold Statistics In Thousands of Kilograms[7] (1 kilogram = 32.1507 troy oz.)

Year	Mine Production	Value Mil. $	Refinery Prod. Dom. & Foreign Ores	Refinery Prod. Secondary (Old Scrap)	Exports (Excl. coinage)	Imports For Consumption	Stocks, Dec. 31 Treas. Dept.[5]	Stocks, Dec. 31 Futures Exch.	Stocks, Dec. 31 Earmarked[6]	Consumption Industry	Consumption Dental	Consumption Industrial[3]	Consumption Jewelry & Arts	Consumption Total	Price $ Per Troy Oz.[4]
1980	970	594.1			6,119	4,542	264.3	5.0	354.5	.9	341	1,287	1,505	3,215	612.56
1981	1,379	633.9			6,437	4,652	264.1	2.4	350.6	.6	314	1,210	1,730	3,276	459.64
1982	1,466	551.0	1,308	1,785	2,970	4,921	264.0	2.3	348.6	.8	358	1,102	1,994	3,463	375.91
1983	2,003	849.1	1,972	1,784	3,139	4,593	263.4	2.5	341.4	.6	325	1,085	1,665	3,078	424.00
1984	2,085	751.8	2,101	1,769	4,981	7,869	262.8	2.4	337.3	.8	305	1,167	1,658	3,140	360.66
1985[7]	75.5	771.0	64.6	49.8	123.4	255.0	8,170	65.6	10,494	18.5	9.3	35.8	51.0	96.3	317.66
1986	116.3	1,376.9	75.6	47.3	155.4	489.9	8,150	87.4	10,348	28.8	7.9	35.7	53.4	97.2	368.24
1987	153.9	2,216.0	112	63.8	119.6	119.5	8,160	87.6	10,253	23.4	6.9	34.4	59.1	100.6	447.95
1988	200.9	2,831.3	138	52.8	328	92.5	8,145	44.6	10,045	38.4	7.6	36.2	54.1	97.8	438.31
1989	265.5	3,266.2	184	36.9	211	152.5	8,146	69.7	9,912	24.8	7.9	36.5	54.4	98.7	382.58
1990[1]	290		205	40	296	98	8,146	70	9,913	21	8	37	50	95	386.91
1991[2]	300		190		270	190	8,150								363.29

[1] Preliminary. [2] Estimate. [3] Including space & defense. [4] Engelhard selling quotations. [5] Includes gold in Exchange Stabilization Fund. [6] Gold held for foreign & international official accounts at N.Y. Federal Reserve Bank. [7] Data prior to 1985 are in *ths. of troy ounces*. *Source: Bureau of Mines*

T.260

Commodity Exchange Inc. (COMEX) Depository Warehouse Stocks of Gold In Thousands of Ounces

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1983	2,247	2,621	2,754	2,645	2,636	2,723	2,630	2,648	2,570	2,538	2,500	2,485
1984	2,481	2,472	2,408	2,452	2,412	2,426	2,376	2,395	2,387	2,391	2,349	2,366
1985	2,308	2,308	2,273	2,109	2,136	2,142	2,133	2,107	2,119	2,083	2,099	2,105
1986	2,109	2,352	2,580	2,593	2,567	1,986	1,992	1,621	1,664	1,726	1,787	2,193
1987	2,890	2,798	2,817	2,903	2,628	2,665	2,614	2,624	2,670	2,636	2,644	2,645
1988	2,624	2,605	2,586	1,596	1,566	1,675	1,834	2,099	2,189	1,949	1,629	1,267
1989	1,434	1,408	1,454	1,532	1,606	1,634	1,602	1,602	1,433	1,483	1,731	2,263
1990	2,241	2,225	2,245	2,220	2,048	1,809	1,582	1,530	1,539	1,564	1,585	1,347
1991	1,636	1,686	1,540	1,298	1,458	1,711	1,772	1,875	1,220	1,342	1,302	1,479
1992	1,605											

Source: Commodity Exchange of N.Y. (COMEX)

T.263

High, Low & Closing Prices of December Gold Futures on COMEX In Dollars per Ounce

Year of Delivery		— Year Prior to Deliv. —			Delivery Year												Life of Delivery Range
		Oct.	Nov.	Dec.	Jan.	Feb	Mar.	Apr.	May	June	July	Aug.	Sept	Oct	Nov	Dec.	
1986	High	363.6	358.5	352.3	392.0	375.0	375.0	361.0	358.0	362.2	371.3	404.5	446.0	446.5	443.8	400.0	446.5
	Low	350.5	347.5	336.5	348.5	347.5	344.0	341.0	347.5	342.0	349.3	364.0	392.0	400.0	376.5	383.0	336.5
	Close	352.4	348.5	351.4	369.7	356.6	345.3	357.7	353.9	354.0	369.7	393.3	429.8	405.0	390.9	389.3	—
1987	High	483.9	434.0	425.0	445.0	427.0	443.0	501.0	500.0	480.0	475.7	490.2	474.8	496.0	497.0	502.3	502.3
	Low	443.0	398.5	404.0	415.0	407.0	420.0	432.2	462.5	447.7	452.7	456.9	458.0	457.9	456.0	475.0	365.0
	Close	443.0	410.9	424.6	423.8	422.9	436.1	472.7	467.1	462.9	475.1	458.7	458.8	471.2	491.0	486.1	—
1988	High	546.0	536.0	542.0	520.5	482.0	478.0	479.0	477.1	485.0	461.0	448.6	439.7	419.0	428.9	433.5	546.0
	Low	498.8	491.5	508.0	473.5	441.3	443.0	461.5	458.0	442.5	435.5	433.0	395.5	398.1	412.6	412.0	395.5
	Close	508.8	529.1	519.6	478.5	448.8	472.0	466.5	469.9	448.1	447.3	439.9	399.2	415.1	424.8	413.9	—
1989	High	449.4	461.5	467.0	443.0	422.0	422.0	412.0	396.7	393.5	399.5	382.5	376.7	382.3	419.7	418.7	546.0
	Low	429.5	444.8	436.5	419.0	403.3	402.0	393.5	371.0	367.5	374.0	364.6	360.6	364.3	375.7	399.5	360.6
	Close	446.3	457.8	439.0	417.1	413.1	407.0	394.8	374.6	385.4	378.7	365.4	372.0	377.6	411.6	400.8	—
1990	High	409.0	450.0	449.0	451.0	451.5	431.5	399.7	392.0	377.8	385.0	425.0	414.3	404.0	391.5	388.5	457.4
	Low	389.2	400.8	424.3	418.5	429.5	381.5	382.0	375.0	357.0	360.5	379.2	381.6	361.5	376.0	368.0	357.0
	Close	403.3	442.3	429.3	439.0	430.3	389.1	386.3	378.1	368.5	379.2	389.2	408.1	381.3	383.3	385.3	—
1991	High	429.0	411.7	414.2	421.5	386.2	385.9	377.2	374.1	385.5	380.1	370.9	359.5	367.4	370.7	372.5	
	Low	384.0	398.0	386.0	382.0	370.5	366.0	362.0	363.5	368.1	367.8	350.1	346.0	356.7	353.6	352.6	
	Close	404.4	401.7	414.2	382.3	382.7	369.2	366.6	371.1	377.1	370.8	352.9	357.3	359.5	367.9	353.6	
1992	High																
	Low																
	Close																

Source: Commodity Exchange of N.Y. (COMEX)

T.266

Gold Total Open Interest at New York (COMEX) Average In Thousands of Contracts

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1985	159,878	136,949	141,351	124,045	133,853	125,455	131,743	130,829	130,653	123,408	126,236	130,414
1986	147,771	139,118	141,941	137,748	130,605	116,896	121,769	133,225	149,013	140,621	145,940	135,533
1987	137,650	134,151	146,896	172,605	169,606	147,703	147,005	149,345	147,346	139,482	137,383	154,110
1988	147,067	152,789	158,224	154,788	153,465	145,951	147,822	140,311	153,556	160,951	153,497	144,839
1989	162,226	166,455	167,419	160,215	180,709	164,196	154,517	150,414	151,836	146,262	154,927	151,788
1990	147,884	132,400	126,890	118,750	117,707	113,958	105,496	120,579	116,331	113,873	111,638	110,343
1991	104,666	98,000	98,429	101,266	100,341	88,961	94,467	99,790	105,053	96,302	109,030	109,004

Source: Commodity Exchange of N.Y. (COMEX)

T.261

Total Volume of Trading of Gold Futures at New York (COMEX) In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	950.3	589.9	962.8	599.6	752.6	443.6	738.1	657.7	615.8	438.7	479.1	545.8	7,774
1986	1,126.2	574.2	703.9	617.9	482.2	451.6	527.6	711.1	1,054.7	846.9	724.3	579.6	8,400
1987	936.4	706.9	794.9	1,135.2	1,021.2	793.4	796.9	760.3	747.9	951.3	847.1	748.2	10,240
1988	815.0	778.7	965.0	637.7	866.2	946.3	884.2	587.5	790.9	694.5	895.5	634.9	9,496
1989	900.4	800.0	993.8	682.4	932.0	936.6	756.1	591.1	630.0	681.2	1,228.4	876.4	9,989
1990	1,327.1	885.1	975.6	472.4	745.2	541.0	747.4	1,191.5	729.4	879.9	705.3	530.1	9,730
1991	957.3	497.8	617.7	446.1	584.4	520.0	551.4	457.2	429.1	551.0	677.3	510.6	6,800

Source: Commodity Exchange of N.Y. (COMEX)

T.265

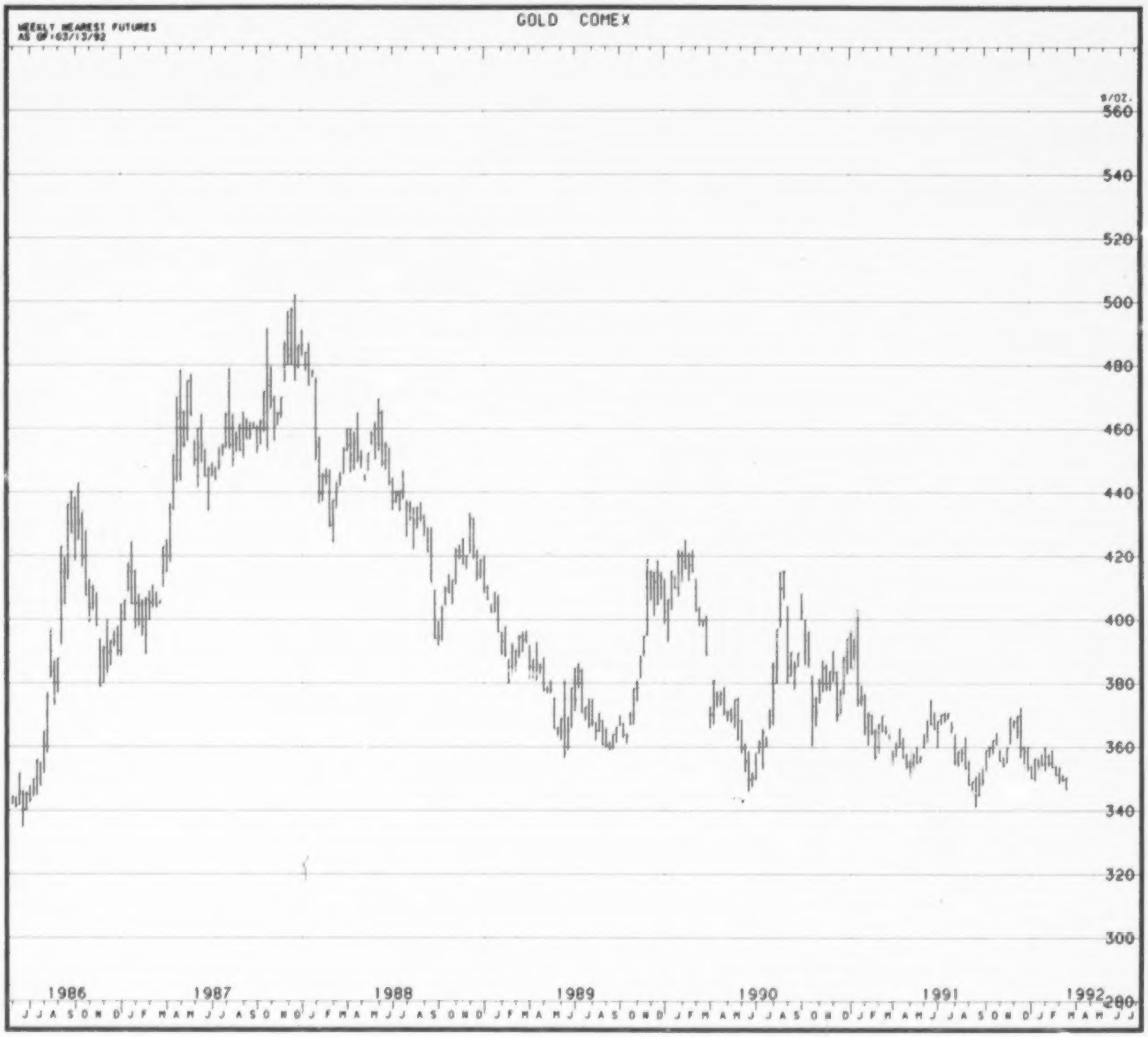
U.S. Monetary Stock of Gold at End of Month In Billions of Dollars

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	11.095	11.093	11.093	11.091	11.091	11.090	11.090	11.090	11.090	11.090	11.090	11.090
1986	11.090	11.090	11.090	11.089	11.085	11.084	11.084	11.084	11.084	11.066	11.070	11.064
1987	11.062	11.085	11.081	11.076	11.070	11.069	11.069	11.068	11.075	11.085	11.082	11.078
1988	11.068	11.063	11.063	11.063	11.063	11.063	11.063	11.061	11.062	11.062	11.059	11.057
1989	11.057	11.056	11.061	11.061	11.060	11.063	11.066	11.066	11.065	11.062	11.060	11.059
1990	11.059	11.059	11.060	11.060	11.065	11.065	11.064	11.065	11.063	11.060	11.059	11.058
1991	11.058	11.058	11.058	11.058	11.057	11.062	11.062	11.062				

Source: Federal Reserve Board

T.264

GOLD



Monthly Average Gold Price (Handy & Harman at New York) $ Per Troy Ounce

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1980	675.4	665.5	553.6	516.8	513.9	600.7	643.3	627.5	675.8	660.3	622.5	594.8	612.51
1981	557.4	500.3	498.8	494.9	479.8	460.8	408.8	411.0	444.1	437.2	413.7	408.7	459.61
1982	384.1	374.1	330.3	350.0	334.4	315.0	340.1	366.0	435.6	421.8	414.1	445.4	375.94
1983	479.9	490.4	419.7	432.2	437.6	412.8	423.1	416.3	411.5	393.2	382.3	387.1	423.83
1984	370.9	386.0	394.4	381.7	377.3	377.7	346.4	347.7	340.9	340.1	340.9	319.0	360.23
1985	302.8	298.8	303.9	324.9	316.1	316.5	317.8	330.2	322.6	326.2	325.5	322.4	317.31
1986	345.5	339.3	345.4	340.6	340.5	342.8	348.9	376.9	419.0	423.6	398.8	391.2	367.70
1987	408.3	401.3	408.9	438.7	460.1	449.6	450.8	460.9	460.2	465.5	466.5	486.0	446.40
1988	476.6	441.9	443.6	451.8	450.8	451.3	437.6	431.3	412.8	406.8	420.1	418.5	436.93
1989	404.0	387.8	390.1	384.4	371.3	367.6	375.0	364.9	361.9	366.8	392.3	409.2	381.28
1990	410.1	416.8	393.1	374.3	369.2	352.3	362.5	395.0	389.5	380.7	381.7	378.2	383.61
1991[1]	383.6	363.8	363.4	358.4	356.8	366.7	367.5	356.2	348.8	358.7	359.5	361.1	362.04
1992[1]													

[1] Preliminary. *Source: U.S. Bureau of Mines; American Metal Market, Handy & Harman* T.259

Grain Sorghum

Global production of grain sorghum or milo in 1991/92 was forecast by USDA to decline slightly to 52 million tonnes. The U.S., the largest producer, accounted for almost 20 percent of the world's output. India's crop was 12 million tonnes, down slightly from a year earlier, while China's was due to fall by nearly 10 percent to over 5 million tonnes. Nigeria, Mexico and Argentina were other major producers.

Trade in sorghum has declined from the active pace seen as recently as 1988. Global exports were projected to be over 7 million tonnes in 1991/92, against almost 3 million a year earlier. The U.S. was the dominant exporter with a market share of 70 percent, followed by Argentina and Australia. Argentine sales of 1.6 million tonnes were 20 percent above the previous year. Major importers of milo included Japan and Mexico. Japan's imports were slated to be 3.6 million tonnes during the season and Mexico's 3 million.

World sorghum utilization in 1991/92 was put at over 54 million tonnes, down 2 percent from the previous year. With a decline in U.S. inventories, projected world ending stocks were 5.8 million tonnes, versus 7.7 million a year earlier.

A smaller acreage reduction requirement and the new flexibility in planting brought on by the Farm Bill spurred U.S. farmers to plant an additional half million acres to sorghum. Weather in the Plains was quite variable, and some areas were very dry, while others were wet. The national average yield was 59.4 bushels per acre, down 6 percent. Higher acreage offset lower yields, resulting in a slightly larger crop of 578 million bushels.

Season's beginning stocks of 143 million bushels were tight, and total supplies of 722 million were almost 10 percent less than in 1990/91. Feed use of sorghum was put at 390 million bushels, down slightly. U.S. exports were pegged at 200 million bushels, against 233 million a year before. The major customers included Mexico and Japan.

Projected domestic ending stocks of 117 million bushels were down 19 percent from the previous year. Sorghum stocks have tightened as more acreage is removed from production.

U.S. Government Program

The target price for sorghum was set at $2.61 a bushel for 1991 and 1992. The loan rate was $1.54 in 1991 and $1.63 in 1992.

Futures Market

Sorghum futures are traded on the Kansas City Board of Trade.

World Sorghum Supply and Demand   In Millions of Metric Tons

Crop Year	Exports				Imports			Total Production	Utilization					Stocks[3]		
	Argentina	Non-U.S.	U.S.	Total	Japan	Mexico	Total		China	Japan	Mexico	U.S.	Total	Non-U.S.	U.S.	Total
1988–9	.7	2.7	8.1	10.8	4.1	2.3	10.8	54.4	5.0	4.1	5.3	12.4	58.8	4.3	11.2	15.5
1989–90	1.2	1.7	7.6	9.3	3.9	3.4	8.9	55.0	5.1	3.9	6.0	13.5	60.7	4.2	5.6	9.8
1990–91[1]	1.3	1.8	5.6	7.5	3.6	3.0	7.5	53.1	5.4	3.4	6.8	10.6	55.1	4.1	3.0	7.7
1991–2[2]	1.6	2.2	5.1	7.3	3.6	3.0	7.3	53.0	4.9	3.6	6.6	10.3	54.8	3.0	3.0	5.9

[1] Preliminary. [2] Estimate. [3] End of crop year season. *Source: Foreign Agricultural Service, U.S.D.A.* T.272a

Salient Statistics of Grain Sorghum in the United States

Crop Year	Acreage Planted[2] for All Purposes	For Grain					For Silage			U. S. Exports of Feed Grains			
		Acreage Harv.	Production 1,000 Bushels	Yield Per Harv. Acre Bushels	Price Cents Per Bushel	Produc. Value Million Dollars	Acreage Harv. 1,000 Acres	Production 1,000 Tons	Yield Per Harv. Acre Tons	Title I Sales	Foreign Donations[3]	Mutual Security (AID)	Total All Gov't. Programs
	1,000 Acres	1,000 Acres								(In Thousand Metric Tons)			
1987–8	11,756	10,531	730,809	69.4	170	1,193	429	5,307	12.4	333	38	420	844
1988–9	10,343	9,042	576,686	63.8	228	1,343	518	5,252	10.1	253	888	25	1,339
1989–90	12,642	11,153	617,860	55.4			510	5,304	10.4				
1990–1[1]	10,535	9,079	571,483	62.9									
1991–2[1]	11,046	9,743	578,345	59.4									

[1] Preliminary. [2] Grain and sweet sorghums for all uses including syrup. [3] Section 416. *Source. Crop Reporting Board, U.S.D.A.* T.267

Production of All Sorghum for Grain in the United States, by States   In Thousands of Bushels

Year	Alabama	Arkansas	Colorado	Illinois	Kansas	Louisiana	Mississip.	Missouri	Nebraska	New Mexico	North Carolina	Oklahoma	South Dakota	Texas
1987	1,440	27,540	9,030	12,040	273,750	11,524	9,425	58,650	106,600	7,980	1,505	18,860	14,310	166,950
1988	1,025	21,080	8,280	6,000	204,600	5,850	8,680	38,070	103,360	8,700	2,310	16,200	11,000	135,450
1989	1,500	21,080	11,375	11,620	198,750	6,175	4,505	45,030	102,300	12,500	3,240	17,640	11,600	164,300
1990[1]	990	18,150	10,340	14,625	184,800	8,320	5,525	42,640	107,800	3,250	1,840	15,400	12,600	135,200
1991[1]	1,150	17,550	12,150	12,580	170,500	7,800	6,300	42,180	81,250	11,050	1,375	14,400	12,600	176,900

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.268

GRAIN SORGHUM

U.S. Grain Sorghum Quarterly Supply and Disappearance In Millions of Bushels

Year Beginning Sept. 1	Supply				Disappearance						Ending Stocks		
					Domestic Use								
	Begin. Stocks	Pro-duction	Im-ports	Total Supply	Food, Alcohol & Industrial	Seed	Feed & Resid.	Total	Ex-ports	Total	Gov't. Owned[1]	Pri-vately Owned[2]	Total Stocks
1988–9	662.7	576.7	0	1,239.4	20.5	1.5	468.0	490.0	309.9	799.9	340.9	98.6	439.5
Sep.–May	662.7	576.7	—	1,239.4	17.0	.8	424.8	442.6	237.8	680.4	463.6	95.4	559.0
June–Aug.	559.0	—	—	559.0	3.5	.7	43.2	47.4	72.1	119.5	340.9	98.6	439.5
1989–90[3]	439.5	617.9	.1	1,057.5	13.6	1.1	505.4	520.1	285.2	805.3	150.0	102.2	252.2
Sep.–Feb.	439.5	617.9	0	1,057.4	8.0	0	360.8	368.8	175.0	543.8	223.0	290.6	513.6
Mar.–May	513.6	0	.1	513.7	2.5	.6	96.6	99.7	81.3	181.0	190.2	142.5	332.7
June–Aug.	335.0	0	0	332.7	3.1	.5	48.0	51.6	28.9	80.5	162.5	57.3	219.8
1990–1[4]	219.8	571.5	0.1	791.3	12.7	1.3	401.3	415.3	232.8	648.2	64.7	78.5	143.2
Sept.–Nov.	219.8	571.5	0	791.2	3.7	0	218.6	222.3	56.6	278.9	157.7	354.6	512.3
Dec.–Feb.	512.3	—	0	512.3	3.5	0	114.7	118.2	61.2	179.5	149.6	183.3	332.9
Mar.–May	332.9	—	0.1	332.9	2.5	0.7	30.9	34.1	76.8	110.9	108.4	113.6	222.0
June–Aug.	222.0	—	0	222.0	3.0	0.6	37.1	40.7	38.2	78.8	64.7	78.5	143.2
1991–2[4]	143.2	578.3	0.1	721.6	——15.0——		389.6	404.6	200.0	604.6			117.0
Sept.–Nov.													
Dec.–Feb.													

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[1] Uncommitted inventory. [2] Includes quantity under loan & farmer-owned reserve. [3] Preliminary. [4] Estimate. *Source: Economic Research Service, U.S.D.A.*

T.269

Average Price of Sorghum Grain, No. 2, Yellow at Kansas City In Dollars Per 100 Pounds (Cwt.)

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
1983–4	5.55	5.37	5.25	5.16	5.09	5.03	5.40	5.36	5.39	5.40	4.95	4.74	5.22
1984–5	4.46	4.25	4.28	4.32	4.48	4.33	4.58	4.76	4.74	4.74	4.50	4.06	4.46
1985–6	3.56	3.62	3.75	3.97	3.95	3.80	3.82	4.00	4.25	4.00	3.20	2.71	3.72
1986–7	2.47	2.60	2.70	2.62	2.50	2.57	2.80	2.85	3.10	3.20	2.80	2.55	2.73
1987–8	2.64	2.75	2.90	2.95	3.05	3.24	3.27	3.16	3.21	4.58	4.79	4.28	3.40
1988–9	4.27	4.17	4.00	4.23	4.24	4.26	4.32	4.17	4.29	4.15	3.96	3.88	4.17
1989–90	3.96	3.91	4.00	3.98	4.00	3.84	4.02	4.32	4.47	4.54	4.82	4.27	4.18
1990–1[1]	3.89	3.79	3.85	3.97	4.12	4.21	4.35	4.34	4.13	4.02	4.05	4.22	4.08
1991–2[1]	4.24	4.30											

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[1] Preliminary. *Source: Economic Research Service, U.S.D.A.*

T.271

U.S. Exports of Grain Sorghum, by Country of Destination In Thousands of Metric Tons

Yr. Beg. October	Poland	Belg. & Luxem.	Can-ada	Spain	W. Ger-many	Tai-wan	Venezu-ela	Israel	Japan	Sene-gal	Nether-lands	Nor-way	Mexico	South Africa	Total All Exports
1983–4	0	0		465	0	—	206	573.6	1,504.8	145.0	.2	0	2,758.4	.2	6,225.6
1984–5	0	.1	.4	45	.1	—	1,093	502.7	2,389.8	30.5	19.3	0	2,061.8	11.8	7,454.7
1985–6	0	0	.1	—	.1	244	916	493	2,182	6.9	4.1	0	372	0	4,111
1986–7	97.3	0	6.4	0	0	598	708	228.5	2,508	0	—	0	787.5	2.0	5,118.5
1987–8	126.8	0	1.5	199.4	0	90.2	—	365.5	2,388	0	—	—	849.5	1.9	6,086.0
1988–9[1]	92.5	0	1.1	226.5	0	73.3	—	414.6	2,634	5.5	—	—	2,246	0	8,107.7

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[1] Preliminary. *Source: Grain & Feed Division, U.S.D.A.*

T.270

Grain Sorghum Price Support Program & Market Prices

Year Beginning September	Price Support Operations (Million Cwt.)							No. 2 Yellow ($ Cwt.)			
	Put Under Price Support										
	Quantity	% of Production	Acquired By CCC	Owned by CCC Sept. 30	Total Paym. to Particip.-Mil.$	Support Loan ($ Per Cwt.)	Target Price ($ Per Cwt.)	Kansas City	Texas High Plains	Los Angeles	Gulf Ports
1983–4	7.6	2.8	1.7	50.0	114	4.50	4.86	5.22	5.53	6.69	5.77
1984–5	36.4	7.5	36.4	67.6	158	4.32	5.14	4.46	5.04	6.08	4.90
1985–6	201.3	32.0	87.5	116.2	227	4.32	5.14	3.72	4.33	5.57	4.07
1986–7	222.2	42.3	127.9	229.0	570	3.25	5.14	2.73	3.24	4.50	3.22
1987–8	201.3	48.6	119.7	259.6	709	3.11	5.14	3.40	3.81	5.18	3.96
1988–9	23.0	7.1	20.0	210.0	349	3.00	4.96	4.17	4.66	5.82	4.81
1989–90[1]	12.0	3.5	10.2	105.0	391	2.80	4.82	4.21	4.38		4.76
1990–1[2]					320	2.66	4.66	4.08	4.48		4.65
1991–2[2]						2.75	4.66				

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[1] Preliminary. [2] Estimate. *Source: Economic Research Service, U.S.D.A.*

T.272

Hay

U.S. hay production in 1991/92 was estimated at 158.4 million tons, compared with 147 million the previous season and was the best in many years, as yields rose. Over half of the crop was alfalfa hay. Adding in carry-in stocks of 27 million tons, total domestic hay supplies in 1991/92 were an estimated 186 million tons, which was quite ample when compared with earlier years.

Domestic demand was expected to be strong because of a large number of roughage-consuming animal units (RCAUs) in the 1991/92 season. Alfalfa hay is produced and consumed in the nation's dairy states, and other hay production is fed mainly to beef cattle.

Because of ample supplies, hay prices declined in 1991/92 (May-April) and averaged $77.17 a ton in the first six months of the season, compared with an average $89.20 for all of 1990/91 and $93.80 in 1989/90.

Salient Statistics of All Hay in the United States

			Million Tons			Per Animal Unit In Tons					Retail Price Paid by Farmers for Seed, April 15 — Dollars Per Cwt.			
Year Beginning May	Acres Harvested 1,000 Acres	Yield Per Acre Tons	Production	Carry-over May 1	Disappearance	Supply	Disappearance	Animal Units Fed[2] Millions	Farm Price $ Per Ton	Farm Produc. Value Million $	Alfalfa (certified)	Timothy	Red Clover	Sudan-Grass
1985–6	60,461	2.46	148.7	26.8	148.9	2.18	1.84	80.5	67.60	9,437	219.00	58.80	121.00	43.50
1986–7	62,334	2.49	155.4	26.7	149.8	2.33	1.91	78.3	59.80	8,611	219.00	78.10	133.00	44.70
1987–8	60,133	2.45	147.5	32.3	152.7	2.38	2.00	76.3	65.00	8,969	222.00	107.00	160.00	44.20
1988–9	65,055	1.94	126.0	27.1	135.6	2.01	1.78	75.5	85.20	10,735	245.00	132.00	143.00	42.00
1989–90	63,395	2.29	145.5	17.5	135.9	2.16	1.80	75.5	85.40	11,197	249.00	132.00	143.00	45.30
1990–1[1]	61,557	2.39	147.0	27.1	147.0	2.30	1.94	75.8	83.20	10,709	253.00	82.10	145.00	47.70
1991–2[1]	63,134	2.51	158.4	27.1		2.40		78.8			266.00	66.40	134.00	48.10

[1] Preliminary. [2] Roughage-consuming animal units fed annually. *Source: Economic Research Service, U.S.D.A.* T.275

Production of All Hay in the United States by Important States In Millions of Tons

Year	Calif.	Idaho	Ill.	Iowa	Mich.	Minn.	Mo.	No. Dak.	Nebr.	N.Y.	Ohio	Okla.	Pa.	So. Dak.	Texas	Wis.
1986	8.6	4.7	3.7	8.0	5.7	9.7	6.0	5.4	7.4	5.4	4.3	4.3	5.1	9.3	7.5	10.8
1987	8.6	4.5	3.2	6.7	4.1	7.8	6.1	4.6	6.9	5.1	4.3	4.2	5.1	6.9	7.9	9.1
1988	8.7	3.9	3.3	6.8	4.2	7.0	5.1	1.9	6.5	4.7	3.5	3.9	4.6	3.9	5.4	5.0
1989	8.5	4.0	3.5	6.7	5.2	6.4	6.8	3.0	5.7	4.5	4.6	5.1	4.7	4.3	9.6	8.1
1990	8.3	4.1	3.3	7.1	5.3	6.6	6.7	3.7	7.4	4.3	4.6	3.9	4.7	6.3	8.0	9.1
1991[1]	8.4	4.5	2.8	6.6	5.0	8.4	7.0	5.4	7.1	4.3	3.4	4.6	3.9	8.0	10.5	11.7

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.277

U.S. Types of Hay Production & Farm Stocks In Millions of Short Tons

	Production					Farm Stocks	
Crop Year	Alfalfa & Mixtures	All Other	All Hay	Corn for Silage[1]	Sorghum[1] Silage	May 1	Dec. 1[3]
1985	85.1	63.6	148.7	102.7	6.6	26.9	100.5
1986	91.9	63.5	155.4	90.2	5.9	26.7	121.2
1987	84.2	63.2	147.5	88.4	5.3	32.3	118.6
1988	69.3	56.7	126.0	78.8	5.3	27.1	90.3
1989	77.4	68.1	145.5	86.1	5.6	17.5	101.2
1990[2]	83.6	63.4	147.0	79.3	5.7	27.1	105.0
1991[2]	87.3	71.1	158.4	74.6	5.8	27.1	

[1] Not included in all tame hay. [2] Preliminary. [3] Data prior to Dec. 1, 1986 are for Jan. 1. *Source: Crop Reporting Board, U.S.D.A.* T.276

Mid-Month Price Received by Farmers for All Hay (Baled) In Dollars Per Ton

Year	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average[1]
1985–6	80.80	70.20	67.90	65.20	67.10	67.50	64.30	65.40	65.80	66.70	67.10	66.20	67.60
1986–7	66.70	61.00	58.80	58.20	57.60	57.90	56.00	57.70	56.10	58.50	59.20	64.10	59.70
1987–8	71.70	62.90	61.20	62.70	64.10	64.20	61.10	63.20	62.80	64.60	67.20	71.40	65.10
1988–9	79.70	77.00	81.60	81.40	82.90	85.10	86.40	87.60	89.50	91.80	96.90	101.00	85.20
1989–90	100.00	90.20	83.40	81.60	85.70	83.20	83.20	83.50	84.90	85.70	87.50	95.00	85.40
1990–1[2]	99.90	86.70	83.60	83.40	86.20	85.60	81.40	79.50	82.00	80.40	84.50	88.60	83.20
1991–2[2]	84.20	71.60	70.60	71.50	68.10	68.80	69.10						

[1] Weighted average by sales. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.278

Heating Oil

U.S. demand for distillate fuel oil fell by 3.4 percent in 1991 to 2.92 million barrels per day (bpd), according to the Department of Energy. Some of the decline resulted from conservation, in response to the higher prices that followed Iraq's August 1990 invasion of Kuwait. And part of the decline reflected the lingering recession, which reduced demand for diesel fuel for trucks and trains. However, dashed expectations for a return to normal winter weather were the main reasons for the drop.

Fourth-quarter 1990 was unusually warm, leaving many consumers with extra heating oil in their tanks when the year began. The U.S. average delivered price of home heating oil was 116.8 cents/gallon in January, up 2.8 cents from a year earlier. But that was well below the October 1990 peak of 125.8 cents, set on concern about the effects of the looming Gulf War on petroleum supplies. When the U.N.-backed campaign to liberate Kuwait began in earnest on January 16, economic factors took over as oil users drew down more expensive secondary stockpiles.

For the year, the number of heating degree days rose by 2.3 percent to 4,373 from 4,274 in 1990; that still was well below the 1989 level of 4,875 and expectations of a more normal level of about 4,700 degree days. (A degree day is the number of degrees per day that the daily average temperature is below 65 degrees F.) However, early indications were that the 1991/92 winter would be the warmest on record.

U.S. ending primary distillate stocks for 1991 rose 8 percent to 143 million barrels from 132 million a year earlier. Secondary stocks, those held by jobbers and wholesalers, are difficult to estimate, as are the tertiary stocks held in homeowners' tanks. They may also have been large, relative to recent practice.

In contrast to the average 250-gallon tank in an American home, western German homeowners have tanks large enough to hold an entire season's heating oil. These tanks are usually filled during the summer, when prices should be at their seasonal nadir. Because of this practice, German tertiary stocks greatly exceed U.S. primary stocks.

Contrary to the market's rally after Iraq invaded Kuwait, the August 1991 coup attempt in the USSR and the resulting collapse of the communist government and dissolution of the USSR into independent republics barely affected distillate prices. The former USSR was the world's largest oil producer and a main supplier of heating oil (called gas oil in Europe) to Germany. Much of the gas oil was shipped through ports in the Baltics, which became independent nations once again after the coup. Russia quickly negotiated deals to continue exporting through those ports, in exchange for hard-currency royalties on the shipments. Russian shipment schedules became erratic, but no serious shortfalls developed.

Futures Markets

Heating oil futures and options on those futures are traded on the New York Mercantile Exchange (NYMEX). In London, gas oil futures and options are traded on the International Petroleum Exchange.

High, Low & Closing Prices of January Heating Oil Futures (No. 2) in N.Y. In Cents per Gallon

Year of Delivery	Year Prior to Delivery[1]												Life of Delivery
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.[1]	
1985 High	—	—	83.75	84.40	87.45	87.40	83.25	84.05	86.10	85.45	81.05	79.25	87.45
Low	—	—	83.15	82.30	82.20	81.75	76.05	76.90	80.80	75.75	74.75	72.25	72.25
Close	—	—	83.75	83.00	86.87	83.00	76.30	82.55	84.80	79.98	76.61	72.40	—
1986 High	—	—	76.90	79.10	76.50	75.50	74.85	79.35	83.50	88.25	90.75	87.45	90.75
Low	—	—	76.70	75.50	74.10	70.00	70.35	73.15	76.55	80.30	85.15	74.80	70.00
Close	—	—	76.10	76.00	76.25	71.40	73.55	79.35	82.49	87.52	87.07	86.55	—
1987 High	57.60	54.00	46.15	44.65	47.10	44.45	40.70	47.80	49.00	46.25	46.75	49.20	57.60
Low	56.50	44.50	37.60	36.20	41.60	40.20	33.85	36.40	33.53	38.95	41.90	42.35	33.53
Close	56.50	44.50	37.60	41.33	41.60	41.33	36.20	47.36	44.57	43.08	42.89	48.90	—
1988 High	—	50.15	52.60	53.24	55.05	57.50	60.25	60.20	55.95	58.70	56.90	57.30	60.25
Low	—	49.02	48.75	50.85	52.70	54.35	56.50	50.75	52.00	55.10	52.80	46.60	46.60
Close	—	49.02	52.32	52.70	54.60	57.30	58.30	54.36	55.49	57.19	54.87	51.44	—
1989 High	—	47.00	48.60	51.89	50.73	50.85	48.65	47.90	45.64	45.35	48.60	53.90	53.90
Low	—	45.27	44.21	47.42	48.68	44.48	43.60	44.90	39.85	38.25	41.50	47.75	38.25
Close	—	45.65	48.02	50.59	50.41	44.48	47.28	45.10	40.02	42.48	48.24	53.48	—
1990 High	—	49.45	55.39	54.50	52.00	54.58	54.50	54.90	59.45	61.70	62.04	110.00	110.00
Low	—	47.89	49.06	50.95	49.01	48.00	51.00	50.65	54.35	57.20	56.75	61.75	47.89
Close	—	49.35	53.67	51.98	51.30	52.44	51.43	54.85	59.39	58.93	61.81	101.87	—
1991 High	56.27	60.40	59.55	59.00	58.20	56.00	62.70	95.00	107.00	107.25	95.20	87.30	107.25
Low	55.55	56.11	56.25	54.60	55.38	53.25	52.95	62.65	78.50	78.20	81.50	73.50	52.95
Close	56.14	58.64	57.43	56.39	55.95	53.91	62.45	77.64	104.53	91.22	88.42	81.31	—
1992 High	—	57.80	58.50	61.50	62.60	61.80	63.80	69.10	67.05	71.30	72.50	63.00	86.67
Low	—	53.40	55.10	56.90	59.10	58.75	60.00	61.80	63.15	65.35	62.40	46.60	53.30
Close	—	54.75	57.85	59.35	62.01	60.37	63.76	66.63	66.10	70.24	63.15	48.29	—

[1] Contract expires the last business day of the previous calendar month quoted. *Source: N.Y. Mercantile Exchange*

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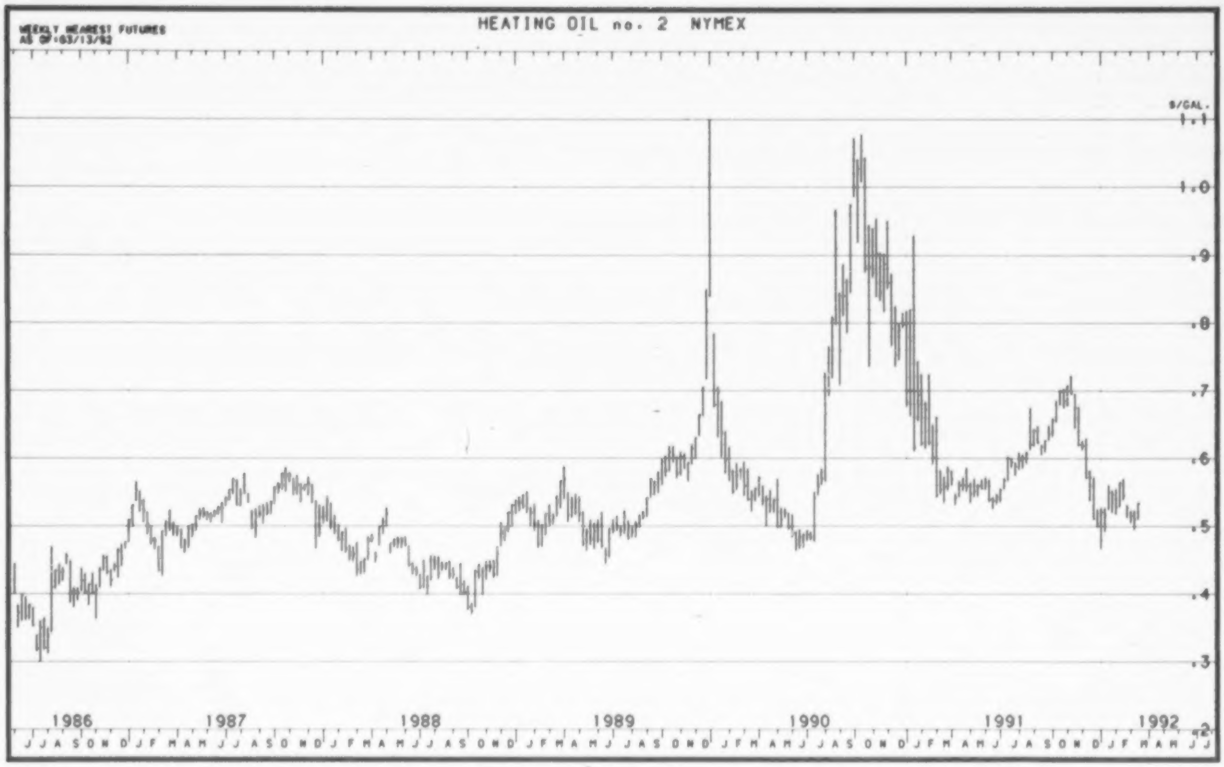


Average Open Interest of Heating Oil Futures (No. 2) in New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	21,131	22,265	21,532	20,805	25,699	28,380	32,716	32,181	34,547	37,149	37,702	30,835
1984	31,359	24,817	17,751	17,421	17,818	17,491	18,646	20,928	23,968	28,550	26,520	25,306
1985	23,197	16,243	16,881	17,196	16,970	20,150	21,419	25,061	29,626	31,726	35,062	33,275
1986	28,866	29,476	32,783	33,841	37,897	50,299	63,935	65,337	70,994	79,030	75,477	70,723
1987	66,228	60,479	47,798	45,494	40,865	44,530	52,480	54,696	65,781	70,167	74,093	74,945
1988	59,605	51,640	49,705	44,674	49,155	58,960	77,018	77,777	87,942	93,762	85,350	80,093
1989	75,038	63,791	60,455	57,533	49,174	49,527	59,799	69,578	88,642	97,064	99,293	105,240
1990	83,020	68,065	67,389	76,954	85,349	112,506	116,108	103,280	97,589	93,631	92,399	81,864
1991	74,216	81,742	81,103	82,419	89,482	102,887	115,896	125,463	135,804	144,026	128,330	117,182

Source: N.Y. Mercantile Exchange T.279

Volume of Trading of Heating Oil Futures[1] in New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	153,864	112,649	137,237	121,300	163,923	149,138	138,706	140,671	187,283	169,271	200,400	193,877	1,868,322
1984	254,788	209,802	144,326	144,041	161,689	144,182	120,668	153,913	137,011	281,183	182,005	163,938	2,091,546
1985	286,264	149,403	162,503	137,064	122,699	133,339	148,117	157,552	202,785	246,558	219,126	242,323	2,207,733
1986	274,057	221,156	214,501	207,748	223,943	247,552	309,662	282,636	285,246	387,054	271,497	349,992	3,275,044
1987	399,813	328,327	348,204	282,109	238,048	273,708	329,078	343,355	347,152	437,157	422,982	543,462	4,293,395
1988	506,182	377,379	403,181	267,233	286,365	380,550	431,231	363,276	441,939	578,648	475,675	423,356	4,935,015
1989	534,041	422,660	430,447	372,640	334,973	445,822	372,388	402,420	475,402	554,733	574,693	820,748	5,740,967
1990	754,945	415,420	462,479	451,708	516,989	463,263	518,993	723,152	505,810	612,310	521,969	429,833	6,376,871
1991	603,683	523,870	392,484	387,232	399,919	425,082	507,755	595,913	538,240	689,143	781,291	835,559	6,680,165

[1] No. 2 heating oil. *Source: N.Y. Mercantile Exchange* T.280

HEATING OIL

U.S. Gross Input to Crude Oil Distillation Units In Millions of 42-Gallon Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1978	450.1	401.4	448.3	426.6	472.4	451.5	470.5	483.8	462.2	475.9	470.6	487.6	5,501
1979	467.7	409.3	449.6	445.2	457.1	453.6	477.9	474.0	447.1	457.9	447.0	472.4	5,459
1980	453.6	421.7	433.8	413.5	423.4	421.7	422.5	412.3	408.2	402.9	403.4	432.4	5,049
1981	418.3	369.6	391.4	368.5	389.3	381.9	389.6	409.2	382.2	382.9	377.5	393.8	4,654
1982	371.5	325.1	361.4	353.1	379.1	388.1	399.6	378.0	376.7	376.8	364.4	368.8	4,443
1983	355.4	307.8	344.8	352.0	374.4	378.3	390.9	383.1	381.9	371.1	366.8	354.1	4,361
1984	364.8	356.0	374.2	362.3	385.5	372.5	377.5	388.6	374.2	376.7	367.7	371.0	4,471
1985	359.1	321.6	356.0	359.1	380.3	372.7	392.6	378.9	362.9	383.3	378.9	395.1	4,440
1986	390.1	337.9	364.5	378.1	412.7	400.4	403.3	415.2	395.7	395.3	387.8	400.3	4,681
1987	394.5	347.7	379.3	379.1	398.3	399.2	422.0	419.3	399.8	399.8	392.2	414.9	4,746
1988	408.4	373.8	410.5	400.4	422.8	411.3	427.9	432.5	400.7	412.4	400.6	420.2	4,922
1989	418.8	364.3	407.9	393.9	420.4	422.0	432.7	434.7	416.9	419.5	406.5	410.6	4,960
1990[1]	422.5	487.6	420.9	410.3	420.7	416.6	446.3	441.0	429.0	405.4	395.6	401.8	4,981
1991[1]	400.8	370.1	404.4	398.4	425.6	423.7	432.1	433.7					

[1] Preliminary. *Source: Bureau of Mines*

T.282

Refiner Sales Prices of Products for Resale (excluding taxes) ¢ per gal.

Residual Fuel Oil (Sulfur one % or less) to end users

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	71.2	71.1	69.8	67.5	61.2	59.9	58.9	57.1	62.8	63.6	61.7	62.6	64.4
1986	62.0	49.0	42.7	36.8	35.0	32.3	27.4	29.3	31.5	31.9	33.7	37.7	37.2
1987	45.5	43.8	43.4	43.9	44.9	45.8	48.3	46.0	44.0	44.5	45.0	41.4	44.7
1988	41.9	40.2	36.9	35.8	36.8	35.3	35.7	36.0	34.7	34.4	36.1	38.8	37.2
1989	41.7	39.8	42.0	46.6	46.5	42.8	42.1	39.6	40.2	43.2	44.1	53.4	43.6
1990	60.0	51.3	45.3	39.6	37.9	34.2	36.3	50.7	59.4	68.6	66.5	62.2	50.4
1991[1]	59.4	43.7	38.2	37.6	36.6	35.3	36.4	36.8	36.8				
No. 2 Fuel Oil													
1985	75.7	75.2	76.1	79.3	76.5	72.9	70.3	72.1	77.0	81.7	84.9	83.2	77.6
1986	73.6	56.4	51.9	45.9	45.2	40.0	34.8	40.0	41.6	41.0	42.4	44.2	48.6
1987	50.6	49.3	49.0	49.4	51.5	52.6	54.9	55.1	53.3	56.7	57.0	54.2	52.7
1988	52.0	48.9	47.6	50.7	50.1	46.6	43.3	44.3	43.3	41.9	45.1	49.9	47.3
1989	53.2	51.1	54.4	56.5	52.6	49.6	50.4	51.2	56.4	60.1	60.4	72.8	56.5
1990	73.8	57.7	57.9	57.5	54.5	49.4	51.9	72.1	85.2	95.0	90.7	80.9	69.7
1991[1]	76.3	67.8	59.6	57.2	56.0	54.0	56.7	60.6	62.1				
No. 2 Diesel Fuel													
1985	74.9	74.2	75.6	79.2	78.9	75.5	72.3	72.5	76.3	80.5	84.3	82.1	77.2
1986	73.3	56.1	47.4	46.3	44.2	39.6	34.0	38.8	41.8	40.9	41.9	43.4	45.2
1987	49.5	49.6	48.7	49.7	52.1	53.1	55.1	57.1	56.0	58.1	57.9	53.8	53.4
1988	51.0	49.0	49.2	51.9	51.3	47.9	44.0	45.0	44.7	42.0	44.6	48.0	47.3
1989	51.1	52.8	56.0	59.5	54.0	50.8	50.5	52.4	58.5	62.2	62.0	68.4	56.7
1990	69.3	57.1	57.7	57.5	55.4	50.5	52.0	73.7	87.3	99.4	93.6	79.8	69.4
1991[1]	75.5	67.4	57.7	57.4	57.2	54.5	57.1	61.8	62.9				
Kerosine—Type Jet Fuel													
1985	79.6	79.5	78.9	79.4	78.2	76.1	75.2	76.8	79.2	81.6	83.6	83.1	79.4
1986	77.9	67.7	58.6	50.0	47.5	44.5	40.1	39.8	42.5	43.4	43.7	45.2	49.5
1987	49.0	49.7	49.1	50.2	51.6	52.7	55.3	57.0	55.9	58.0	58.6	55.6	53.8
1988	53.2	52.4	50.4	50.4	51.4	51.0	47.5	47.9	46.9	45.2	46.4	50.1	49.5
1989	56.2	55.4	56.5	59.5	56.6	54.4	53.5	54.5	58.6	63.2	63.4	67.3	58.3
1990	77.0	66.9	61.7	59.9	57.4	54.8	56.0	71.3	93.2	113.5	107.0	90.1	77.3
1991[1]	82.2	73.8	62.2	58.8	60.8	58.8	59.4	63.3	65.9				
Propane (Consumer Grade)													
1985	40.1	39.3	38.0	37.9	38.1	37.0	36.3	36.5	37.6	39.7	43.0	46.8	39.8
1986	44.0	35.4	29.2	27.3	28.5	28.3	25.3	24.6	24.8	25.1	24.3	23.6	29.0
1987	25.0	24.4	23.6	24.4	24.0	23.6	24.4	25.6	26.1	26.8	27.1	26.0	25.2
1988	26.8	26.6	25.6	25.2	24.9	24.3	21.8	22.1	22.5	22.1	22.1	22.9	24.0
1989	24.0	22.7	22.5	22.7	22.1	21.4	20.7	21.7	23.1	24.4	24.3	36.4	24.7
1990	54.5	34.0	27.1	25.2	24.0	24.9	27.3	36.3	43.6	53.5	50.5	44.7	38.7
1991[1]	42.2	31.6	31.3	31.6	32.0	29.3	27.6	29.6	35.0				

[1] Preliminary. *Source: Energy Information Administration*

Stocks of Distillate Fuel in the U.S., First of the Month In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Residual Fuel — Oil Stocks — Jan. 1	July 1
1981	205.4	179.4	172.6	164.4	164.6	171.8	179.9	186.3	200.2	207.3	201.2	200.1	91.5	69.4
1982	191.5	164.4	147.4	126.3	108.0	113.6	123.7	148.2	158.7	161.2	170.1	185.6	78.0	60.7
1983	178.6	167.6	148.2	118.1	103.1	108.9	113.7	130.7	142.4	154.0	162.6	161.2	66.2	49.9
1984	140.3	119.3	132.2	109.6	97.7	98.1	112.8	124.4	133.3	142.9	152.2	161.0	48.5	46.9
1985	161.1	142.4	121.4	99.3	96.8	104.4	109.7	115.7	113.8	117.4	123.4	139.7	53.0	39.6
1986	143.7	136.5	112.4	98.8	95.9	98.9	107.9	118.9	137.7	152.4	151.6	158.3	50.4	42.8
1987	155.1	141.3	123.7	109.3	100.3	101.3	104.4	114.6	124.7	126.8	121.0	128.0	47.4	41.4
1988	134.5	128.1	110.3	89.8	95.0	104.9	110.4	120.0	125.7	131.5	128.2	128.8	47.4	42.2
1989	123.5	120.3	107.5	96.6	98.4	99.3	99.6	115.0	116.3	123.2	121.7	119.8	44.6	44.1
1990[1]	105.7	118.0	112.2	99.7	99.5	102.8	109.4	125.2	136.0	136.3	132.4	132.2	43.8	46.8
1991[1]	112.1	101.3	98.3	102.2	107.0	113.5	124.3	130.6						

[1] Preliminary. *Source: Bureau of Mines*

T.285

U.S. Production of Distillate Fuel Oil In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	92.6	78.6	77.0	72.5	76.1	75.0	74.2	82.3	78.3	77.0	81.5	88.6	953.8
1982	80.3	67.9	70.9	70.7	81.2	81.9	84.8	77.7	79.7	88.0	85.8	82.3	951.3
1983	72.0	59.8	61.8	65.1	75.8	76.4	80.7	81.1	82.2	83.1	80.4	78.2	896.5
1984	80.3	83.1	76.8	70.3	81.3	86.4	84.3	82.5	81.2	83.4	84.8	86.7	981.2
1985	81.6	70.1	70.3	74.7	83.3	79.4	82.0	80.4	77.8	90.0	93.1	98.4	980.9
1986	89.9	71.8	81.9	83.6	88.6	81.9	84.0	90.6	86.0	84.2	87.5	91.2	1,021.2
1987	85.5	71.6	75.1	76.6	79.5	80.7	83.7	83.9	82.4	86.2	91.1	100.5	996.6
1988	93.3	77.3	83.9	86.0	91.0	86.8	86.3	88.3	83.3	87.6	87.3	95.1	1,046.3
1989	92.2	78.4	84.1	83.6	85.2	84.3	88.3	90.1	88.6	90.1	91.9	101.3	1,058.0
1990[1]	97.2	77.1	82.3	84.1	89.1	89.8	93.2	97.1	89.0	90.8	87.4	90.4	1,067.5
1991[1]	88.4	80.3	88.7	84.7	90.6	88.2	92.8	91.7					

[1] Preliminary. *Source: Dept. of Energy*

T.286

U.S. Imports of Distillate Fuel Oil In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	8.5	9.1	4.6	3.5	5.5	6.7	5.5	5.4	3.9	3.7	3.7	2.9	63.1
1982	3.0	3.7	1.5	1.8	2.3	3.1	3.9	2.5	1.8	2.8	4.4	3.4	34.0
1983	2.1	1.6	1.3	2.2	4.5	5.4	8.3	9.3	7.8	8.1	6.1	6.8	63.5
1984	9.3	13.2	3.6	6.6	7.8	7.7	6.2	8.0	8.7	13.0	9.5	5.9	99.4
1985	8.4	4.0	4.8	7.6	6.1	4.6	3.0	2.5	6.7	8.1	8.4	8.9	73.1
1986	10.1	4.7	6.7	4.4	4.6	5.1	9.7	11.5	7.8	7.5	7.6	10.5	90.3
1987	6.9	7.1	9.2	5.7	6.3	8.0	11.8	6.9	6.6	7.3	5.6	11.7	93.2
1988	13.2	11.1	7.6	6.3	7.8	6.6	6.9	8.6	9.2	10.4	9.8	12.7	110.4
1989	10.2	9.0	13.6	9.0	9.0	7.0	10.4	7.9	7.5	8.1	9.2	10.1	111.7
1990[1]	15.5	10.0	8.7	9.2	6.4	7.7	7.1	9.1	6.8	5.9	7.1	7.4	101.5
1991[1]	5.9	3.9	6.4	7.7	5.7	6.3	4.7	5.2					

[1] Preliminary. *Source: Dept. of Energy*

T.287

U.S. Domestic Consumption of Distillate Fuel Oil In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	127.4	94.5	90.0	76.0	74.7	73.9	73.7	74.0	75.4	86.9	86.4	99.6	1,032.5
1982	108.0	86.4	91.3	89.3	75.8	73.5	63.8	68.8	75.2	80.0	74.2	88.5	974.9
1983	86.7	77.8	91.4	80.9	73.0	75.7	70.4	77.3	77.3	80.9	86.2	104.3	981.9
1984	109.3	82.2	101.0	87.8	87.2	77.8	77.6	79.3	79.6	85.7	84.8	88.8	1,041.2
1985	107.4	93.2	95.9	83.9	80.8	77.8	75.5	81.7	77.3	89.9	82.4	100.9	1,046.8
1986	103.2	95.7	98.2	87.1	85.6	76.3	80.4	81.2	76.2	90.3	86.3	103.2	1,063.7
1987	102.6	93.7	96.6	89.7	83.2	83.7	84.1	79.2	85.1	97.7	88.0	102.9	1,086.4
1988	110.3	103.2	109.7	85.9	86.7	85.6	81.8	89.1	84.6	99.8	95.5	110.4	1,142.5
1989	102.2	95.5	106.3	89.2	91.7	90.1	80.5	91.9	86.7	96.9	99.3	121.3	1,152.2
1990[1]	98.5	91.0	101.2	91.8	89.8	88.5	83.5	98.7	85.9	91.8	92.8	87.3	1,102.5
1991[1]	104.0	84.0	92.0	86.1	84.8	83.5	82.1	86.1					

[1] Preliminary. *Source: Dept. of Energy*

T.288

Hides and Leather

World production of hides and skins rose in 1991, led by increased output in the former Soviet Union. The U.S. was second to the Soviets in production of bovine hides and skins, with output of 1.045 million tonnes, slightly above the year-earlier level. Output of hides is a function of cattle slaughter, which has been in a long-term downtrend in the U.S., partly due to declining consumption of red meats. Other major producers of hides in 1991 included the EC, Brazil and Argentina.

The former Soviet Union was the leading consumer of hides and skins, followed by the EC, the Pacific Rim countries, and the U.S. Pacific Rim countries were major importers of hides and skins for tanning and finishing into leather products, very often exported to the U.S. Utilization of hides and skins in the U.S. in 1991 was estimated at 445,000 tonnes, a 13 percent jump from the year-earlier level.

The footwear industry is the largest domestic leather market, accounting for about 52 percent of internal leather shipments in 1991. That was slightly below the year-earlier level, in a continuation of a trend towards substitution of cheaper, synthetic products for leather in certain types of footwear. U.S. garment leather production rose slightly in 1991, while production for handbags, luggage, and personal leather goods was expected to remain unchanged. The fastest growing market for leather in the U.S. was automotive and furniture upholstery leather. Approximately 19 percent of all furniture manufactured in the U.S. is now covered with leather.

Most of the output of hides and skins in the U.S. goes to the export market. Correspondingly, the U.S. is the leading single exporter of hides and skins. Major markets for U.S. hides in 1991 included Mexico, Korea, Taiwan and Japan.

Mexico's demand for hides improved in 1991, mainly due to a better economic climate in that country. U.S. exporters of hides benefited from Mexico's prohibition on imports of South American hides and skins because of foot and mouth disease.

South Korea was the largest purchaser of U.S. hides in 1990, taking about 45 percent of U.S. exports. The country was expected to be a major importer again in 1991. Japan's imports in 1991 were expected to decline, due to flat demand for leather goods. That country had been the second largest export market for U.S. hides in 1990. The U.S. generally supplies almost all of Canada's imports of hides and skins. Overall, U.S. exports of hides and skins during the first eight months of 1991 declined to 13.5 million hides from 14.4 million in 1990.

World Production of Bovine Hides and Skins In Thousands of Metric Tons

Year	Argentina	Australia	Brazil	Canada	Colombia	France	Germany[3]	Mexico	Italy	Poland	South Africa	Turkey	New Zealand	United Kingdom	United States	USSR
1982	293	155	308	98	92	179	44 149	138	96	75	53	56	46	106	1,019	867
1983	286	160	322	99	84	200	45 149	140	99	70	61	59	44	109	1,040	892
1984	297	129	310	94	87	190	45 164	145	101	73	60	60	37	113	1,066	917
1985	319	124	340	94	92	190	48 159	139	101	71		61	41	110	1,028	942
1986	332	131	324	92	92	186	48 161	120	95	86	59	62	36	104	1,115	1,022
1987	314	144	350	85	86	193	203	122	91	80	59	62	54	101	1,128	1,060
1988	303	139	390	82	93	185	191	176	89	80	51	63	41	90	1,022	1,090
1989	304	137	400	84	97	170	180	222	88	80	55	65	35	91	1,086	1,090
1990[1]	307	149	560	78	105	175	195	181	92	95	55	67	40	92	1,033	1,050
1991[2]	308	142	585	74	109	180	195	153	92	82	58	69	44	91	1,045	1,150
1992[2]	306	143	620	77	110	180	195	154	91	74	61	71	44	95	1,082	1,175

[1] Preliminary. [2] Forecast. [3] Prior to 1987 figures are for East & West Germany. *Source: Foreign Agricultural Service, U.S.D.A.* T.289

Salient Statistics of Hides & Leather in the United States

Year	New Supply of Cattle Hides — Domestic Slaughter — Federally Inspected	Uninspected[4]	Total Production	Net Exports	Total New Supply	Wholesale Prices—¢ lb. Heavy Native Cows[2]	Heavy Native[3] Steers	Production All U.S. Tanning	Cattle-Hide	Upper & Lining Leather Exports Ths. Sq. Ft.	Wholesale Leather Indexes — Upper — Men	Women	Footwear Production[5]	Export
	Thousands of Equivalent Hides							In Ths. Equiv. Hides			— 1982 = 100 —		— Mil. Pairs —	
1982	33,907	1,936	35,843	22,553	13,290	45.1	42.3	18,229	15,028	159,804	100.0	100.0	359.1	7.7
1983	34,816	1,833	36,649	21,205	15,444	53.5	50.2	18,610	15,430	155,808	101.7	103.5	339.2	6.2
1984	35,880	1,702	37,582	25,194	12,388	67.0	60.9	16,940	14,021	163,373	102.5	101.6	303.2	6.2
1985	34,765	1,528	36,293	24,398	11,895	57.55	53.9	15,230	12,550	131,505	104.2	103.6	265.1	9.2
1986	35,913	1,375	37,288	26,522	10,766	68.06	64.2	14,460	12,497	160,888	107.2	104.3	240.9	10.3
1987	34,468	1,179	35,647	24,007	11,640		79.8	14,800	12,846	194,152	111.4	107.2	230.0	14.7
1988	34,048	1,031	35,079	24,527	10,552		87.7	13,375	11,569	215,358	121.3	112.5	235.1	18.4
1989	33,010	907	33,917	22,495	11,422		90.0	13,029	11,329		127.5	116.2	210.5	
1990[1]	32,389	831	33,220	20,920	12,300						135.8			
1991[1]	29,396	734	30,130	4,746	25,384									

[1] Preliminary. [2] Heifers. [3] F.O.B. Chicago. [4] Includes farm slaughter; diseased & condemned animals & hides taken off fallen animals. [5] Other than rubber. *Sources: Leather Industries of America; Bureau of Labor Statistics; Dept. of Commerce* T.290

U.S. Exports of Upper & Lining Leather In Thousands of Square Feet

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	19,633	14,418	19,717	17,678	18,016	18,692	13,921	10,918	15,393	12,682	19,464	11,660	192,193
1982	10,849	10,343	13,696	15,534	17,449	18,610	18,486	12,065	10,417	11,842	9,726	10,786	159,804
1983	11,052	12,453	15,078	15,200	13,492	14,868	12,013	13,099	12,715	14,027	12,400	9,412	155,808
1984	13,624	13,015	17,787	14,772	19,514	14,294	12,907	14,046	11,219	11,533	10,231	10,431	163,373
1985	10,266	8,855	11,049	11,637	12,112	16,233	9,919	10,763	8,085	12,310	12,452	7,824	131,505
1986	12,032	10,849	13,050	13,652	14,560	13,945	11,902	16,769	11,502	13,043	14,003	15,581	160,888
1987	12,172	15,625	19,865	18,874	18,818	19,585	15,455	15,015	14,806	13,557	15,703	14,677	194,152
1988[1]	16,033	18,431	18,430	14,647	19,273	17,623	15,023	13,967	21,022	22,556	15,835	22,519	215,358

[1] Preliminary. *Source: Leather Industries of America* T.292

U.S. Production of All Footwear (Shoes, Sandals, Slippers, Athletic, Etc.) In Millions of Pairs

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	31.1	30.4	34.1	32.6	31.6	30.0	26.8	30.4	32.6	34.7	30.3	27.4	372.0
1982	29.4	30.2	34.4	30.0	31.0	31.0	26.1	30.7	31.4	31.2	28.4	25.3	359.1
1983	27.7	31.6	31.3	26.9	29.8	28.4	22.4	30.2	29.3	28.9	27.6	24.8	339.2
1984	27.3	29.1	30.2	27.7	28.6	24.6	20.7	26.0	21.9	25.2	22.3	19.6	303.2
1985	22.5	21.0	22.2	22.2	24.9	21.1	19.7	24.5	22.4	24.8	21.1	18.7	265.1
1986	22.5	21.6	21.3	21.2	20.8	18.4	18.4	20.8	19.7	21.4	18.4	16.6	240.9
1987	18.2	19.2	20.7	20.0	19.7	20.7	16.1	20.6	20.9	20.6	18.2	15.2	230.0
1988	16.7	20.8	21.6	19.3	20.2	19.7	14.0	21.4	21.3	21.2	21.3	17.6	235.1
1989	18.1	18.5	19.6	16.6	18.7	17.5	13.7	19.7	17.4	19.0	17.5	14.3	210.5
1990[1]	17.8	17.2	18.5	16.7	18.9	16.7	14.3	18.8	16.5	18.2	15.4	12.6	201.6
1991[1]	———	47.6	———	———	38.4	———	———	37.7	———				

[1] Preliminary. *Source: U.S. Department of Commerce* T.295

U.S. Imports and Exports of All Cattle Hides In Thousands of Hides

	Imports		U.S. Exports—By Country of Destination													
Year	Total	From Canada	Total	Canada	France	Germany	Japan	Mexico	Netherlands	Poland	Taiwan	Spain	Romania	Korea Repub.	Czech.	Italy
1981	1,028	881	19,703	1,212	137	319	7,512	2,485	94	203		394	680	3,579	334	486
1982	658	592	23,175	1,041	478	671	6,469	1,882	280	790		643	939	4,572	415	1,395
1983	665	570	21,281	1,235	332	343	6,413	1,296	174	303		246	1,318	4,635	489	823
1984	711	669	25,029	1,072	292	252	7,334	1,858	221	319	2,697	242	1,032	5,423	669	1,170
1985	1,044	883	24,956	729	215	110	6,824	2,287	71	402	2,797	214	1,168	6,441	418	1,134
1986	761	594	26,481	666	262	71	6,624	1,002	133	179	3,542	190	688	9,316	521	1,502
1987	488	338	23,921	830	151	54	5,956	1,427	50	39	3,166	143	308	10,062	311	392
1988	642	477	25,169	759	93	97	7,140	1,865	100	58	2,493	142	624	9,986	249	319
1989	1,424	852	23,401	614	17	68	6,268	1,284	132	184	1,886	64	1,154	10,322	261	343
1990	661	436	21,581	674	28	78	6,802	1,438	99	2	1,476	175	253	9,839	141	136
1991[1]	1,549	976	20,185	561	4	52	4,662	2,702	65	0	2,058	39	0	9,300	10	138

[1] Preliminary. *Source: Leather Industries of America* T.297

Average Factory Price of Footwear in the United States In Dollars Per Pair

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	11.67	11.93	12.52	12.72	13.09	13.16	13.01	13.14	13.22	12.90	12.67	12.58	12.52
1982	12.96	12.32	12.49	12.74	12.76	13.30	14.13	13.34	13.12	13.10	13.56	14.08	13.14
1983	12.88	13.72	13.18	13.54	14.20	13.57	12.91	14.14	14.06	15.02	14.69	15.55	13.96
1984	14.95	14.19	14.00	14.99	15.20	14.43	14.88	14.59	15.11	14.56	15.00	15.62	14.79
1985	15.24	14.97	14.10	14.87	14.86	15.35	14.24	14.55	14.12	13.71	13.56	15.13	14.56
1986	14.60	13.86	13.82	14.22	15.00	14.98	15.53	14.38	14.64	14.38	14.40	16.50	14.69
1987	15.09	14.58	14.05	15.15	15.89	15.63	16.47	15.60	15.63	15.23	15.89	17.96	15.60
1988	16.57	14.80	13.88	15.97	13.77	14.46	17.27	14.92	15.32	15.18	14.98	16.73	15.24
1989	15.94	15.35	15.00	16.90	15.77	16.45	16.36	17.17	17.38	17.20	17.73	18.68	16.66
1990	———	17.25	———	———	17.84	———	———	19.04	———	———	19.82	———	18.53
1991[1]	———	20.42	———	———	20.42	———	———	19.58	———				

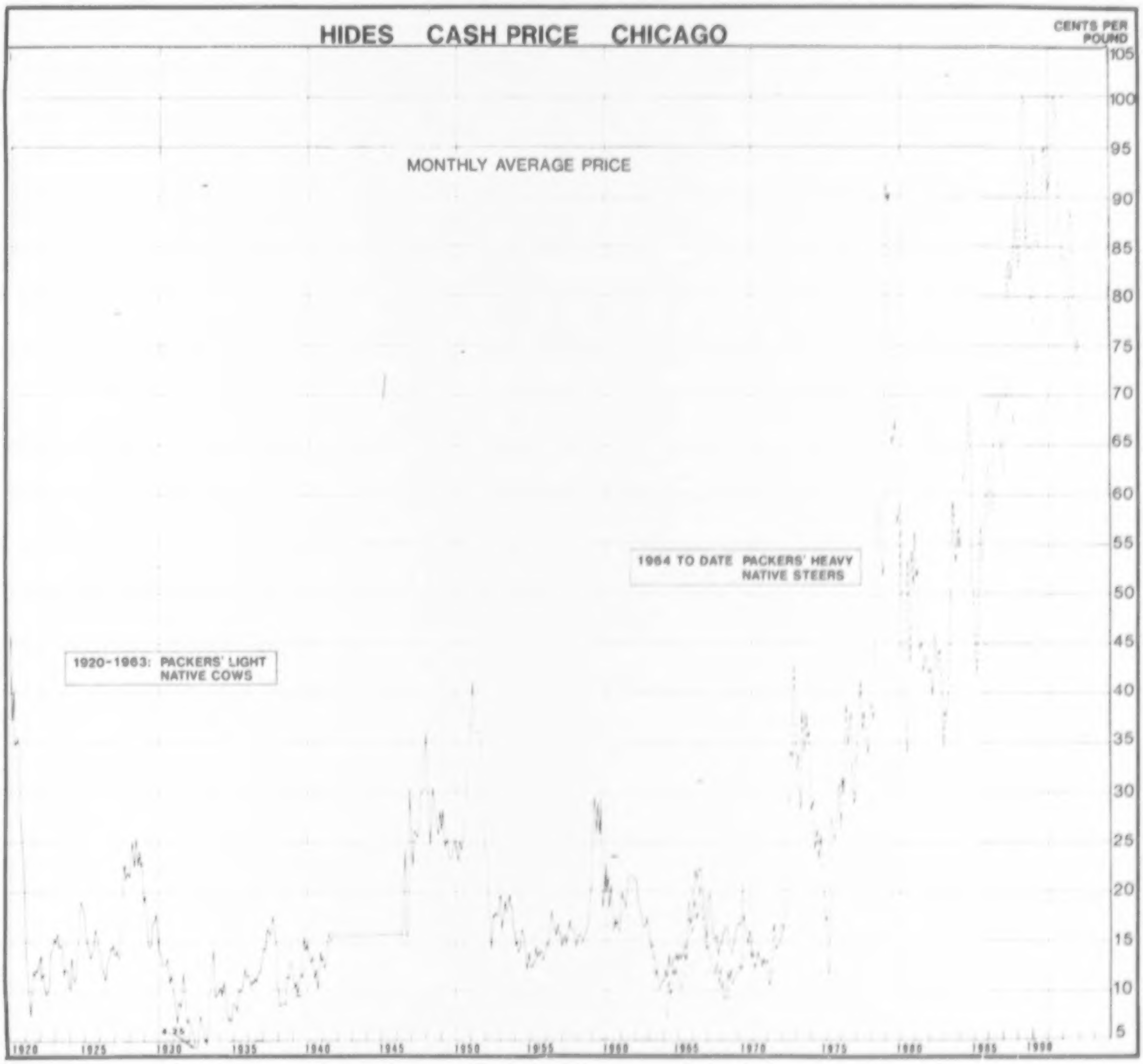
[1] Preliminary. *Source: Leather Industries of America* T.298

HIDES AND LEATHER

Wholesale Price of Hides (Packer Heavy Native Steers)—F.O.B. Chicago In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	42.3	40.5	41.4	44.5	46.0	42.8	43.3	44.5	44.5	44.5	42.7	38.8	43.0
1983	37.1	37.7	40.4	46.0	50.8	51.8	59.2	57.3	53.3	53.8	56.7	54.8	49.9
1984	54.8	56.0	62.0	61.7	64.5	64.7	66.5	69.2	68.9	61.7	52.5	47.9	60.9
1985	46.0	41.7	45.5	54.7	57.0	53.1	54.0	55.7	57.1	57.6	63.5	60.8	53.9
1986	57.7	58.4	57.7	63.1	68.6	68.7	68.3	69.9	64.5	65.9	65.2	61.8	64.2
1987	61.8	64.2	69.7	82.4	83.5	81.7	82.5	83.8	89.0	89.9	85.4	83.7	79.8
1988	82.9	86.3	97.4	100.0	99.2	87.6	84.2	93.7	87.3	80.5	77.1	76.7	87.7
1989	84.0	87.4	94.6	87.5	85.2	85.0	90.3	91.7	95.9	94.7	92.9	90.9	90.0
1990	92.7	92.8	95.5	100.0	99.6	97.9	96.7	91.7	87.5	84.6	83.0	84.4	92.2
1991	81.6	76.4	75.7	86.3	88.8	86.7	84.1	77.2	74.1	75.4	75.4	71.3	79.4
1992	70.5	67.8											

Source: Wall St. Journal; CRB. T.296



Hogs

The hog cycle in 1991 remained in an expansionary phase that was expected to continue at least through late-1992. On September 1, 1991 the U.S. hog/pig inventory of 59.3 million head was 6 percent higher than a year earlier, partly reflecting the steady year-over-year increase in the breeding inventory during 1991. By December 1, the inventory totaled 57.0 million head, up 5 percent from 54.5 million a year earlier. Hog prices during much of 1991 were generally positive for producers and encouraged herd expansion. Weakness late in the year squeezed profit margins, but not enough to stem further gains in hog numbers.

Seasonally, hog slaughter and pork production peak in the fourth quarter, while the second quarter is generally the low period. Pork production in 1991 rose about 4 percent from the 15.3 billion pounds in 1990. Although herd buildup could ease in late-1992, pork output was expected to show year-to-year gains until mid-1993. Owing to herd expansion, first-half 1992 pork production was likely to be about 8 percent higher than a year earlier, and second-half output about 7 percent higher. If these projections were realized, 1992 hog slaughter would approach the record levels of 1971 and 1980.

The end of the expansion phase of the current hog cycle was expected to occur by mid-1993, making it shorter than the average cycle since 1965. The sluggish U.S. economy and ample supplies of competitive meats during the period abet the likelihood of a short cycle. If this scenario proves correct, breeding herds by late 1992 or early 1993 would register the first year-to-year decreases since third-quarter 1989.

Retail pork prices averaged $2.15 a pound in 1991's third quarter, up 2 cents from the second quarter. However, late-1991 retail prices averaged about $2.05/lb., down about 18 cents from a year earlier. With first-half 1992 pork production up 8 percent or so, retail prices should fall under $2.00/lb. for much of the period, with further declines likely in second-half 1992.

U.S. pork imports dropped in 1991 to about 840 million pounds, 6 percent under 1990. Canada, Poland and Denmark were the chief suppliers to the U.S. Imports from Canada could increase, as a countervailing import fee on Canadian swine may curtail hog exports to the U.S.

U.S. pork exports in 1991 totaled about 255 million pounds, up 6 percent from 1990, with another gain expected for 1992. Japan, Mexico, and Canada are the major importers. However, U.S. shipments of pork to Japan declined during early 1991, and the slowdown could continue. Demand from other Pacific Rim nations will likely increase, if prices are competitive.

Futures Markets

Live hog futures and options are traded on the Chicago Mercantile Exchange (CME). A smaller futures contract is also traded on the MidAmerica Commodity Exchange in Chicago.

World Hog Numbers in Specified Countries as of January 1 In Millions of Head

Year	Brazil	Canada	Denmark	France	Germany	Hungary	Italy	Japan	Mexico	Philippines	Poland	Spain	China[3]	Un. Kingdom	United States	USSR	World
1985	30.0	10.6	9.0	11.0	23.6	9.2	9.0	10.7	12.3	7.3	17.2	15.0	306.8	7.8	54.1	77.9	708.6
1986	30.5	10.0	9.1	11.0	24.3	8.3	9.1	11.1	13.1	7.3	19.2	15.8	331.4	7.9	52.3	77.8	735.2
1987	31.7	10.0	9.4	12.1	37.3	8.7	9.3	11.4	12.4	7.1	19.6	15.8	337.2	8.0	51.0	79.5	748.7
1988	31.7	10.7	9.0	11.9	36.1	8.2	9.4	11.7	10.9	7.6	19.4	16.9	327.7	7.9	54.4	77.4	741.7
1989	31.7	11.0	9.1	11.9	35.2	8.3	9.4	11.9	9.0	7.9	19.6	16.1	342.2	7.6	55.5	78.1	753.4
1990	33.2	10.7	9.1	11.9	34.2	7.7	9.3	11.8	8.6	8.1	18.7	16.9	352.8	7.4	53.8	78.4	759.2
1991[1]	32.5	10.6	9.3	11.9	30.8	8.0	9.1	11.3	8.6	8.0	19.7	16.0	362.4	7.4	54.5	75.6	763.4
1992[2]	33.1	10.8	9.5	11.6	28.9	7.4	9.1	11.5	9.2	8.2	21.5	16.2	365.0	7.4	58.5	73.0	768.1

[1] Preliminary. [2] Forecast. [3] Mainland. *Source: Foreign Agricultural Service, U.S.D.A.* T.300

Salient Statistics of Pigs and Hogs in the U.S.

	Pig Crop					Value of Hogs on Farms, Dec. 1					Hogs Slaughtered in Thousand Head				
	Spring[2]		Fall[3]								Commercial				
Year	Sows Farrowed	Pigs Saved	Sows Farrowed	Pigs Saved	Total Pig Crop	$ Per Head	Total Million $	Hog Marketings Ths. Head	Quantity Produced (Live Wt.) Mil. Lbs.	Value of Production Mil. $	Federally Inspected	Other	Total	Farm	Total
	In Thousands of Head														
1985	5,571	42,545	5,667	43,484	86,029	69.60	3,640	86,731	20,167	8,872	81,974	2,519	84,492	446	84,938
1986	5,246	40,392	5,423	41,997	82,389	91.90	4,686	82,895	19,461	9,577	77,290	2,309	79,598	358	79,956
1987	5,560	43,356	5,814	44,991	88,347	76.00	4,132	84,249	20,445	10,443	78,913	2,168	81,081	328	81,409
1988	6,030	46,883	6,036	46,000	92,883	66.30	3,678	90,334	21,669	9,145	85,517	2,279	87,796	337	88,133
1989	6,041	47,238	5,777	44,852	91,884	79.10	4,258	92,311	21,850	9,255	86,328	2,364	88,692	315	89,007
1990[1]	5,745	45,321	5,717	44,780	90,087	85.40	4,657	83,700	20,050	10,100	82,901	2,000	84,901	350	85,251
1991[4]	5,996	47,467	6,038	47,640	95,287	69.10	3,935								
1992[4]	6,219	47,640	4,715	47,467	96,107										

[1] Preliminary. [2] December–May. [3] June–November. [4] Estimate. *Source: Statistical Reporting Service, U.S.D.A.* T.302

HOGS

Hogs and Pigs on U.S. Farms on December 1 In Thousands of Head

Year	Georgia	Illinois	Indiana	Iowa	Kansas	Kentucky	Minnesota	Missouri	Nebraska	No. Carolina	Ohio	South Dakota	Tennessee	Wisconsin	Total
1986	1,100	5,000	4,150	12,600	1,420	880	4,260	2,850	3,950	2,360	2,000	1,520	770	1,300	51,001
1987	1,175	5,400	4,600	14,100	1,470	900	4,500	3,000	4,050	2,550	2,150	1,560	820	1,320	54,384
1988	1,210	5,600	4,300	14,000	1,500	1,090	4,690	2,850	4,150	2,700	2,210	1,810	1,000	1,275	55,469
1989	1,200	5,700	4,350	13,500	1,450	975	4,450	2,700	4,200	2,570	2,080	1,720	700	1,150	53,821
1990	1,100	5,700	4,400	13,800	1,500	920	4,500	2,800	4,300	2,800	2,000	1,770	620	1,200	54,477
1991[1]	1,130	5,800	4,550	14,800	1,400	950	4,900	2,650	4,400	3,550	1,875	1,950	670	1,180	56,974

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.301

Quarterly 10—U.S. State Hogs & Pigs Report In Thousands of Head

Year[2]	Inventory[1]	Breeding[1]	Market[1]	Farrowings	Pig Crop	Year	Inventory[1]	Breeding[1]	Market[1]	Farrowings	Pig Crop
1987	39,730	5,125	34,605	8,853	68,955	1990[3]	42,200				
I	39,730	5,110	34,580	1,916	14,840	I	42,200	5,280	36,920	2,013	15,748
II	38,370	5,215	33,155	2,352	18,601	II	40,190	5,245	34,945	2,458	19,576
III	40,995	5,340	35,615	2,284	17,692	III	42,630	5,405	37,225	2,236	17,684
IV	43,150	5,310	37,840	2,266	17,572	IV	44,120	5,300	38,820	2,238	17,459
1988[3]	42,675	5,435	37,240	9,370	72,268	1991[3]	42,900				
I	42,675	5,435	37,485	2,123	16,489	I	42,900	5,257	37,643	2,129	16,700
II	41,345	5,555	35,825	2,578	20,175	II	41,990	5,450	36,540	2,577	20,555
III	44,065	5,630	38,435	2,358	18,000	III	44,520	5,700	38,820	2,413	19,260
IV	45,000	5,460	39,540	2,301	17,520	IV	46,950	5,685	41,265	2,433	
1989[3]	43,210	5,335	37,875	9,203	71,807						
I	43,210	5,335	37,875	2,109	16,439						
II	41,655	5,440	36,215	2,580	20,309						
III	44,020	5,565	38,455	2,324	18,167						
IV	45,200	5,335	39,865	2,190	16,890						

[1] Beginning of period. [2] Quarters are Dec. preceding year—Feb. (I), Mar.-May (II), June-Aug. (III), & Sept.-Nov. (IV). [3] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.181a

U.S. Federally Inspected Hog Slaughter In Thousands of Head

Week ended	1989	1990	1991	Week ended	1989	1990	1991
Jan. 5[1]	1,419	1,337	1,346	July 6	1,244	1,191	1,174
12	1,719	1,763	1,814	13	1,557	1,461	1,565
19	1,679	1,674	1,710	20	1,518	1,430	1,504
26	1,647	1,684	1,606	27	1,501	1,361	1,476
Feb. 2	1,631	1,658	1,566	Aug. 3	1,543	1,463	1,465
9	1,656	1,656	1,628	10	1,612	1,471	1,502
16	1,678	1,681	1,638	17	1,615	1,607	1,625
23	1,665	1,624	1,618	24	1,610	1,606	1,614
Mar. 2	1,621	1,713	1,646	31	1,713	1,641	1,731
9	1,716	1,614	1,717	Sept. 7	1,545	1,440	1,502
16	1,703	1,707	1,686	14	1,888	1,747	1,836
23	1,601	1,631	1,583	21	1,853	1,722	1,752
30	1,648	1,591	1,650	28	1,785	1,676	1,778
Apr. 6	1,761	1,661	1,615	Oct. 5	1,810	1,695	1,795
13	1,780	1,642	1,717	12	1,810	1,628	1,767
20	1,813	1,594	1,715	19	1,797	1,665	1,837
27	1,764	1,594	1,663	26	1,739	1,624	1,835
May 4	1,732	1,579	1,624	Nov. 2	1,812	1,662	
11	1,654	1,586	1,610	9	1,791	1,759	
18	1,632	1,528	1,576	16	1,901	1,768	
25	1,618	1,522	1,506	23	1,564	1,480	
June 1	1,343	1,236	1,313	30	1,908	1,841	
8	1,589	1,460	1,524	Dec. 7	1,832	1,814	
15	1,589	1,452	1,576	14	1,716	1,825	
22	1,533	1,472	1,497	21	1,521	1,762	
29	1,500	1,402	1,465	28	1,443	1,252	

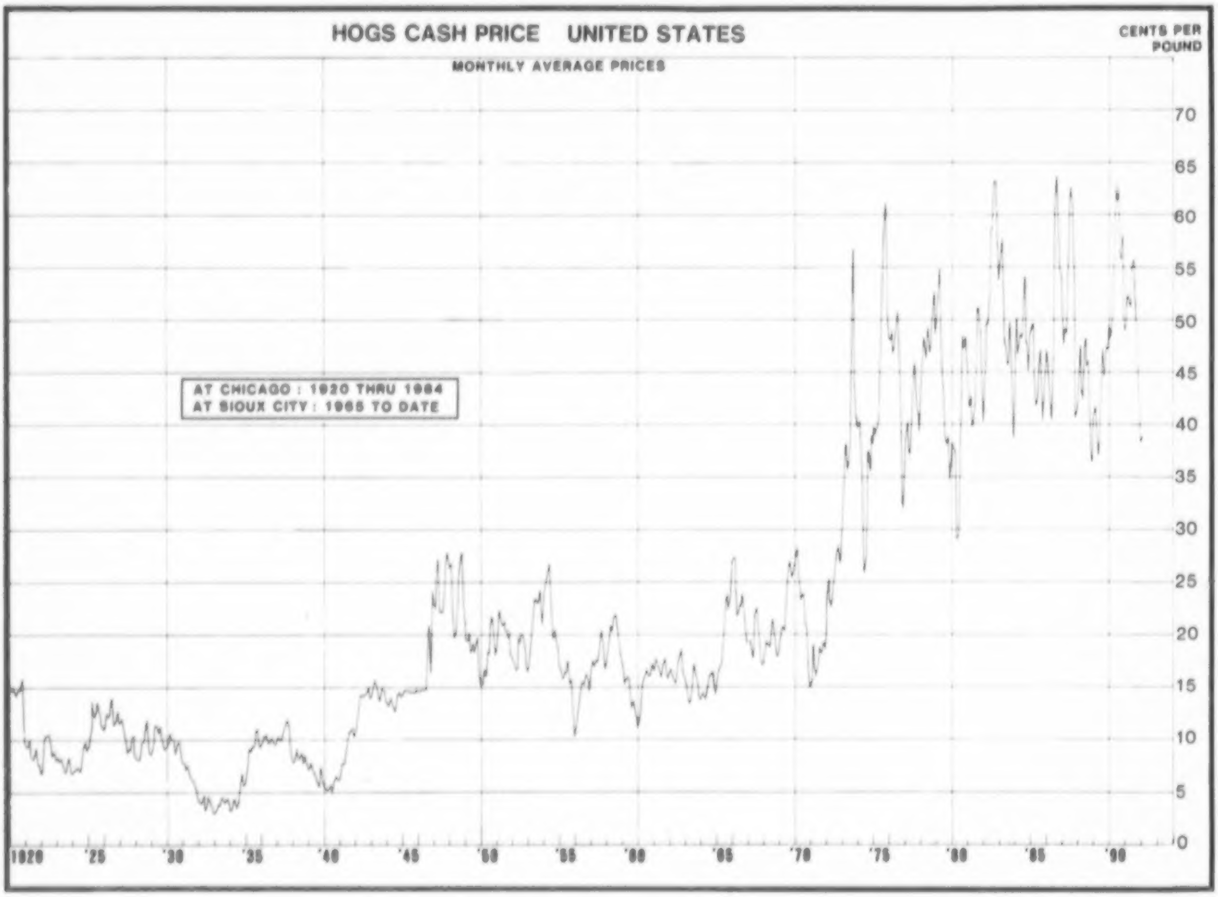
[1] Corresponding dates—Jan. 9, 1989; Jan. 7, 1990; Jan. 5 1991. *Source: Economic Research Service, U.S.D.A.* T.181b

High, Low & Closing Prices of June Live Hogs Futures at Chicago In Cents per Pound

Year of Delivery		Year Prior to Delivery									Delivery Year					Life of Delivery Range
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1986	High	48.95	48.65	49.00	47.60	44.40	43.75	43.97	44.70	46.45	47.00	45.50	45.90	46.87	50.10	59.72	59.72
	Low	47.55	46.80	46.90	41.75	40.05	39.80	42.25	42.20	43.25	43.65	42.10	42.05	40.25	45.52	49.75	39.80
	Close	48.70	48.25	47.75	43.57	40.82	43.00	42.65	44.65	45.85	45.27	42.80	43.82	46.60	49.77	59.65	—
1987	High	43.30	44.75	46.67	48.00	49.50	59.20	49.40	48.70	49.10	47.85	48.25	48.85	54.80	58.85	64.10	64.10
	Low	39.90	39.90	40.60	43.80	46.10	41.20	46.00	45.45	45.50	44.90	44.60	45.60	46.45	52.60	57.85	37.50
	Close	40.97	40.85	44.95	47.45	47.45	48.25	46.70	48.47	45.62	47.82	45.50	47.82	53.47	58.17	64.00	—
1988	High	41.50	43.00	43.72	44.65	45.05	45.30	44.50	43.15	42.70	49.17	50.35	51.65	52.15	54.95	54.70	54.95
	Low	38.50	40.65	40.70	42.15	43.65	42.72	41.25	41.35	40.25	41.90	46.65	45.57	48.10	48.90	48.30	37.50
	Close	40.95	42.45	41.20	44.55	44.70	43.30	41.82	41.85	42.00	46.95	46.65	49.30	48.80	54.77	50.45	—
1989	High	44.60	46.80	56.25	54.80	50.10	49.90	49.35	48.95	50.50	50.80	48.67	49.22	47.20	49.30	49.40	56.25
	Low	42.50	44.35	46.75	46.90	47.20	46.70	47.60	45.50	46.85	46.60	46.17	45.95	44.67	46.45	46.90	42.50
	Close	44.40	46.70	54.20	47.52	47.27	49.10	48.40	47.05	49.57	48.15	48.20	46.47	46.62	47.92	49.15	—
1990	High	47.70	48.15	48.70	47.75	46.20	47.50	48.20	50.67	49.90	53.62	55.10	57.85	63.70	67.45	66.85	67.45
	Low	46.90	46.40	46.75	44.75	44.25	45.20	46.50	47.55	46.90	48.25	51.50	54.00	57.10	62.80	59.75	44.25
	Close	47.37	47.60	48.60	44.80	45.87	47.40	47.75	49.42	48.62	52.42	54.85	57.02	63.12	65.50	60.50	—
1991	High	51.70	51.85	51.45	51.30	51.20	51.00	52.95	53.75	52.15	56.10	57.40	59.30	59.07	59.25	59.25	59.30
	Low	50.45	50.50	48.65	49.10	47.70	48.45	50.30	49.20	48.60	50.75	53.85	56.20	56.25	56.15	55.57	47.70
	Close	51.00	50.50	48.77	51.30	48.70	49.85	50.77	50.05	51.37	54.62	56.77	58.42	58.92	56.30	59.22	—

Source: Chicago Mercantile Exchange

T.308



HOGS

Average Wholesale Price of Hogs, Average (All Weights) at Sioux City In Dollars Per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	47.56	49.08	48.67	52.10	55.79	61.37	62.69	60.56	55.19	49.28	40.74	41.56	47.11
1988	44.59	47.45	43.19	42.28	47.75	48.26	45.60	45.98	41.28	38.92	36.52	40.58	43.25
1989	41.64	41.11	39.88	37.22	42.40	46.24	47.26	47.04	44.58	47.49	47.21	49.65	43.91
1990	48.41	49.48	52.56	54.63	62.80	61.34	62.54	56.37	55.64	58.02	50.17	48.96	54.72
1991	51.32	52.31	51.92	51.42	54.83	54.79	55.74	51.11	46.76	43.51	38.29		

Source: Department of Agriculture T.307

Average Price Received by Farmers for Hogs in the U.S. In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1987	47.20	48.20	47.40	50.80	54.40	59.20	59.60	58.60	54.30	48.90	40.60	40.30	50.80
1988	43.00	45.80	42.20	41.90	46.30	47.10	44.10	44.70	40.70	38.70	36.20	39.70	42.50
1989	40.90	40.40	39.30	36.90	41.60	45.10	45.90	45.60	43.40	46.60	45.00	48.20	43.30
1990	47.30	48.20	51.30	53.80	61.20	60.30	60.80	55.90	54.30	56.80	50.20	47.80	54.00
1991[2]	50.00	52.10	51.40	50.80	54.10	54.70	54.20	51.20	46.40	43.60	38.00	38.80	48.78

[1] Weighted average by quantities sold. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.306

Hog-Corn Price Ratio[1] at Omaha

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987[2]	32.7	35.1	32.6	32.7	31.6	34.3	38.4	41.3	36.3	31.0	24.3	23.8	32.8
1988[2]	25.0	25.7	23.0	22.5	24.3	18.9	16.8	17.8	15.9	14.9	14.7	16.2	19.6
1989[2]	16.4	16.3	15.4	14.8	16.8	18.5	19.6	20.9	19.8	20.8	20.1	21.7	18.4
1990[2]	21.6	22.0	21.9	21.2	23.6	22.4	23.9	23.1	25.1	25.9	23.2	21.2	22.5
1991[2]	22.0	22.5	21.5	21.0	22.7	23.7	23.8	22.0	19.8	19.0	16.7		

[1] Ratio computed by dividing average price packer and shipper purchases of barrows and gilts by average price No. 2 yellow corn both at Omaha. This ratio represents the number of bushels of corn required to buy 100 pounds of live hogs. [2] Preliminary.
Source: Crop Reporting Board, U.S.D.A. T.304

Cold Storage Holdings of Frozen Pork[1] in the U.S. on First of Month In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	197.1	217.7	228.5	221.8	217.8	218.8	189.2	181.1	175.1	186.2	212.2	251.7
1988	285.5	291.5	308.2	345.8	397.3	388.6	362.8	337.2	287.0	288.0	320.8	361.3
1989	357.9	380.5	393.4	393.1	432.4	431.3	380.1	343.1	278.1	278.9	275.8	279.2
1990	256.3	272.4	308.3	297.1	314.7	322.7	292.6	256.4	224.7	225.8	231.9	222.1
1991[2]	233.6	248.3	292.5	289.0	340.6	333.3	312.3	277.9	282.4	281.3	300.3	308.1

[1] Excludes lard. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.303

Federally Inspected Hog Slaughter in the United States In Thousands of Head

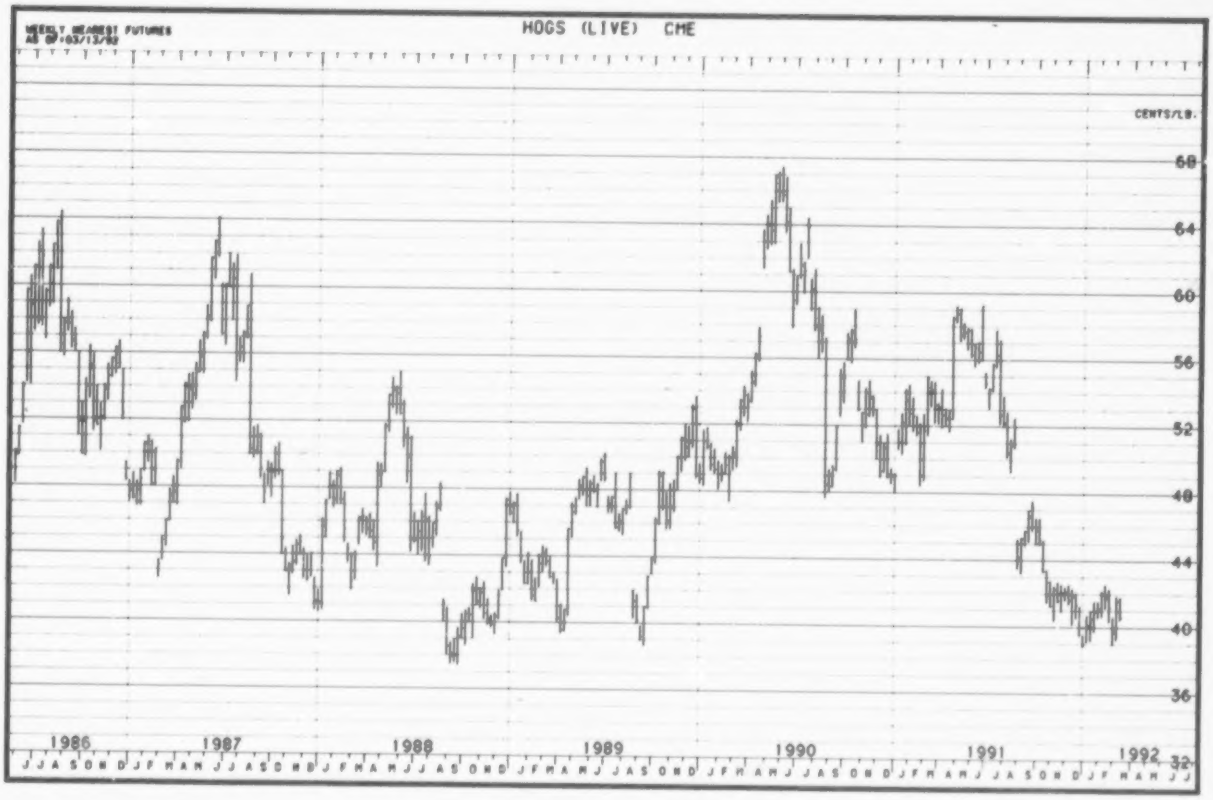
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1987	6,723	5,886	6,787	6,492	5,922	5,987	6,019	6,019	6,855	7,519	7,121	7,583	78,913
1988	6,803	6,518	7,505	6,929	6,713	6,715	6,199	7,101	7,534	7,887	7,908	7,703	85,516
1989	7,116	6,619	7,569	7,199	7,277	6,881	6,131	7,392	7,493	7,823	7,815	7,012	86,328
1990[1]	7,407	6,643	7,279	6,785	6,799	6,152	5,938	7,110	6,716	7,546	7,334	7,140	82,901
1991[1]	7,461	6,469	7,044	7,320	6,948	6,133	6,557	7,098	7,177				

[1] Preliminary. *Source: Statistical Reporting Service, U.S.D.A.* T.305

Average Live Weight of All Hogs Slaughtered Under Federal Inspection In Pounds Per Head

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1987[2]	251	248	246	247	247	248	246	244	246	249	252	250	247.8
1988[2]	248	247	247	249	250	250	249	247	248	251	253	251	249.2
1989[2]	249	247	247	251	251	251	247	247	246	248	251	250	248.8
1990[2]	249	248	249	250	251	252	249	249	248	250	253	252	250.0
1991[2]	251	250	250	252	254	253	251	250	251				

[1] Average is weighted by federally inspected slaughter. [2] Preliminary. *Source: Department of Agriculture* T.311



Average Open Interest of Live Hogs Futures at Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	23,133	29,322	37,186	47,986	57,124	56,039	43,691	47,839	52,468	49,044	49,938	44,542
1983	47,316	44,412	41,019	36,564	33,103	31,593	27,269	30,683	34,621	31,472	30,666	30,323
1984	33,760	32,849	34,212	33,930	35,009	33,006	27,643	23,016	22,755	20,871	24,145	23,141
1985	26,589	29,408	27,125	24,248	24,019	23,545	20,878	18,894	19,799	21,567	27,843	24,852
1986	22,480	21,273	19,769	17,522	23,209	25,855	30,480	31,697	34,611	28,256	30,491	27,062
1987	26,275	28,125	30,794	30,195	32,431	32,889	30,752	31,553	34,197	28,562	25,138	24,440
1988	26,681	30,532	31,329	28,156	31,801	31,221	27,466	26,476	31,507	30,092	34,251	31,458
1989	31,923	30,853	29,014	30,414	29,646	27,353	25,375	25,345	28,308	33,936	35,913	29,693
1990	30,335	31,018	37,789	39,257	47,291	43,631	32,942	29,964	26,982	25,691	[illegible]	25,757
1991	22,742	24,798	24,449	22,400	25,871	21,275	18,154	16,771	17,281	18,462	21,572	19,167
1992	23,052											

Source: Chicago Mercantile Exchange

T.309

Volume of Trading of Live Hogs Futures at Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	178.7	195.6	262.6	222.6	288.0	408.3	300.1	344.5	347.2	383.4	324.9	305.1	3,561.0
1983	291.6	254.7	213.8	230.6	254.1	262.1	217.4	279.9	220.8	174.2	197.5	194.2	2,790.7
1984	232.2	212.7	243.8	172.3	211.0	192.6	189.2	143.9	109.1	140.7	181.0	140.5	2,169.0
1985	155.0	128.3	160.2	141.7	156.2	141.9	134.7	120.2	136.1	156.8	145.2	143.5	2,719.9
1986	156.3	108.5	113.7	153.6	157.4	160.8	224.3	168.8	196.5	183.4	171.0	142.5	1,936.7
1987	159.2	138.5	172.7	190.3	189.7	212.1	219.5	169.8	174.0	175.5	121.1	118.0	2,040.5
1988	172.9	143.0	172.4	137.6	169.6	267.0	171.4	140.3	160.7	150.3	166.8	156.7	2,008.8
1989	188.2	135.0	152.8	130.7	175.2	147.5	141.9	131.8	149.6	181.5	205.9	151.6	1,891.9
1990	181.0	119.9	189.7	188.8	278.3	277.0	212.5	170.4	147.0	160.3	186.1	130.4	2,241.3
1991	177.9	150.3	148.0	157.0	155.7	120.8	131.1	120.9	102.9	118.4	104.5	94.8	1,318.6

Source: Chicago Mercantile Exchange

T.310

Honey

Honey production in ten major countries in 1991 was forecast at 748,300 tonnes, above 734,271 in 1990, as output rose in North America and the USSR, and declined in South America, Asia, and Australia. The ten countries surveyed by USDA account for approximately 60 percent of world production and include: the top producers, the former USSR and China; major exporters, like Mexico, Argentina, and Australia; and leading importers, such as Japan, Germany, and the U.S.

Total consumption in the ten countries during 1991 was expected to grow to 723,600 tonnes from 713,500 the year before, partly reflecting the inclusion of the former East Germany in the statistics in 1991. Foreign trade in honey was projected to decline slightly, because of gains in production and drawdowns in inventories. Year-end stocks in the group of countries were expected to fall to 84,000 tonnes from 90,000 the previous year and to be the lowest in several years.

Honey output in the U.S. in 1991 rebounded slightly from drought-reduced levels in the two previous years and was 91,000 tonnes. Imports were slated to increase to 43,000 tonnes from 34,944 in 1990 and were the highest in several years to compensate for earlier inventory drawdowns. Major suppliers to the U.S. included China, Argentina, and Mexico. Exports were pegged at 5,400 tonnes, a little lower than the year before, and were supported by the USDA's Market Promotion Program.

Domestic consumption in 1991 was expected to be 129,600 tonnes, down from 135,575 the year before and the smallest in some time. U.S. stocks at the end of the year were projected to fall slightly from year-end 1990 to 54,000 tonnes and to be considerably below levels in the late 1980s.

U.S. Government Program

The producer price of honey for the 1991 through 1995 crops is supported through a "nonrecourse" loan to beekeepers at 53.8 cents per pound.

World Production of Honey In Thousands of Metric Tons

Year	Argentina	Australia	Brazil	Canada	China	Ethiopia	France	West Germany	Japan	Mexico	Poland	Spain	Turkey	United States	U.S.S.R.	World Total
1978	35.0	18.6	16.0	30.6	75.0	20.0	9.5	15.0	8.5	54.0	12.0	11.0	21.7	104.5	179.0	827.7
1979	30.0	25.0	18.0	32.9	110.0	20.0	14.4	9.9	7.5	52.0	13.0	12.0	23.7	107.8	189.0	880.1
1980	33.0	19.5	20.0	29.2	81.0	20.5	12.0	13.5	6.2	60.0	10.0	13.0	23.0	90.6	183.0	837.4
1981	30.0	24.8	24.0	32.9	110.0	21.0	10.0	14.0	6.0	60.0	10.0	13.0	23.0	84.3	184.0	873.8
1982	33.0	22.4	25.0	30.5	136.0	N.A.	25.0	18.0	7.4	45.0	——	N.A.	——	104.3	186.0	908.8
1983	30.0	25.0	25.0	38.8	143.3	N.A.	N.A.	19.0	6.9	68.0	——	N.A.	——	93.0	210.0	970.0
1984	35.0	28.0	25.0	43.3	140.0	N.A.	N.A.	16.0	6.8	60.0	——	N.A.	——	75.0	193.0	622.1[2]
1985	45.0	26.9	28.0	36.1	150.0	N.A.	N.A.	11.0	7.2	56.0	——	N.A.	——	68.0	204.0	632.2[2]
1986	36.0	25.1	27.0	34.0	160.0	N.A.	N.A.	16.0	5.6	54.0	——	N.A.	——	90.9	210.0	658.6[2]
1987	44.0	28.0	30.5	39.8	204.0	N.A.	N.A.	16.0	6.0	47.9	——	N.A.	——	102.9	219.2	738.3[2]
1988	46.0	27.5	36.0	37.1	156.0	N.A.	N.A.	18.0	4.9	46.1	——	N.A.	——	97.1	243.0	711.9[2]
1989	40.0	26.0	34.0	27.8	189.0	N.A.	N.A.	29.0	5.3	48.5	——	N.A.	——	80.3	225.0	705.2[2]
1990	46.0	26.2	32.3	33.1	193.0	N.A.	N.A.	23.0	4.9	51.0	——	N.A.	——	88.9	236.0	734.6[2]
1991[1]	44.0	26.2	35.0	35.0	190.0	N.A.	N.A.	35.0	4.3	52.7	——	N.A.	——	91.0	240.0	753.2[2]

[1] Preliminary. [2] *Only* for countries listed. *Source: Foreign Agricultural Service, U.S.D.A.* T.312

Salient Statistics of Honey in the United States

			In Millions of Pounds					Program Activity			¢ Lb.		
Year	Number of Colonies Thous.	Yield Per Colony Lbs.	Total U.S. Production	Domestic Disapp.	Imports For Consumption	Domestic Exports	Stocks Jan. 1	Placed Under Loan	CCC Take Over	Net Gov't[3] Expenditure —Mil. $—	Domestic Avg Price All Honey	National Average Price Support	Per Capita Consumption Lbs.
1978	4,081	56.7	231.5	277.3	56.0	8.0	30.0	40.5	0	3.5	54.5	36.8	1.1
1979	4,155	57.4	238.7	282.7	58.6	8.8	32.2	49.1	0	−1.7	59.0	43.9	1.0
1980	4,140	48.3	199.8	226.2	49.0	8.5	38.0	41.1	6.0	8.7	61.4	50.3	.8
1981	4,213	44.1	185.9	232.0	77.3	9.2	52.1	55.2	35.2	8.4	63.2	57.4	.8
1982	4,250	54.1	230.0	250.8	92.0	8.5	74.1	88.4	74.5	27.4	56.8	60.4	.9
1983	4,275	48.0	205.0	278.9	109.8	7.5	136.8	113.6	106.4	48.0	54.4	62.2	.9
1984	3,200	38.4	165.1		128.7	7.5	165.2	107.5	105.8	90.2	50.0	65.8	1.0
1985	4,325	34.7	150.1	257.1	138.2	6.5	191.2	102.0	98.0	80.8	47.5	65.3	1.0
1986	3,205	62.0	200.4	292.3	130.4	7.4	223.1	155.2	52.8	89.4	51.1	64.0	1.0
1987	3,190	71.1	226.8	336.9	66.5	12.9	254.2	172.6	78.6	72.6	50.3	61.0	1.0
1988	3,219	66.5	214.1	274.7	55.6	12.9	197.7	249.8	55.9	100.1	50.0	59.1	1.0
1989[1]	3,443	51.4	177.0	288.2	73.2	12.2	176.8	173.3	47.7	41.7	49.8	56.4	1.0
1990[1]	3,188	61.5	196.0	303.6	80.2	10.2	126.6	195.9	12.6	46.7	52.8	53.8	1.0
1991[2]	3,197	65.5	209.3	292.1	99.3	12.5	89.0	151.4	8.6	N.A.	54.4	53.8	

[1] Preliminary. [2] Forecast. *Source: Crop Reporting Board, U.S.D.A.* T.313

Interest Rates, U.S.

In an attempt to snap the economy out of a lingering recession, the Federal Reserve Board reduced its discount rate five times in 1991, ending with a 100-basis-point cut to 3.5 percent on December 20, a level last seen in November 1964. The discount rate began 1991 at 6.5 percent, having been cut to that level from 7 percent on December 18, 1990.

Federal funds ended 1991 at an effective rate of 4.09 percent, down 144 basis points on the year. But, as the yield curve chart in this section shows, rate reductions were far larger on the short end than for longer maturities--even though the rate of inflation dropped significantly.

Adjusted for constant maturity, the Treasury's 30-year bond yielded 7.41 percent on December 31, down 85 basis points from 8.26 percent on December 31, 1990. The active 30-year bond, the 8 percent of November 2021, ended at 107-04, a yield to maturity of 7.39 percent. That was the lowest yield for the bench mark bond since January 15, 1987, when the yield also was 7.39 percent. Using the Treasury's constant maturity series, the yield curve between three-month and 30-year Treasuries steepened from 182 basis points at the end of 1990 to 353 basis points on December 31, 1991.

Banks, which had been reluctant to pass on the lower cost of funds to borrowers, reduced the prime rate to 6.5 percent on December 23. The prime rate had been 10 percent at the end of 1990 and was reduced to 9.5 percent on January 2, 1991, right after bills for loans tied to the December prime would have been mailed. It was the first of the year's six reductions. However, credit card rates inched higher on average during 1991, as banks attempted to recoup their losses on other loans. Credit card delinquency rates also rose sharply. But legislation to roll back credit card rates from about 19.8 percent to about 14.5 percent was quickly killed in November. The Dow Jones Industrials fell 120 points in the session after the Senate passed a bill to cap rates on November 14.

Mortgage rates also dropped sharply in 1991, sparking a rush to refinance loans. The prepayment risk reduced the upside potential in the mortgage-backed securities market. Since homeowners can prepay without penalty, holders of Ginnie Mae passthroughs purchased at a premium to par face capital losses when rates are falling. By the end of the year, only one current coupon mortgage issue, the Federal National Mortgage Association (Fannie Mae) 7.5 percent bonds was still trading at less than par. The Federal Home Loan Mortgage Bank's commitment rate for conventional 30-year fixed mortgages ended 1991 at 8.35 percent, down 133 basis points from the last week in 1990.

Consumers also responded to lower rates by pulling funds from maturing bank CDs and paying off credit cards and other debts. Funds were also moved into the stock market in search of higher returns. Many banks cut passbook rates to 4 percent or less, while money market and NOW accounts went even lower.

Futures Markets

A futures contract exists for almost every maturity on the yield curve, as well as for municipal and commercial credit risks. Important U.S. contracts include T-bills and Eurodollar CDs on the Chicago International Monetary Market, and T-bonds and municipal bonds on the Chicago Board of Trade. Futures also are traded on two, five and ten-year T-notes, 30-day interest rates, and one-month LIBOR.

U.S. Producer Commodity Price Index (Wholesale, All Commodities) 1982 = 100

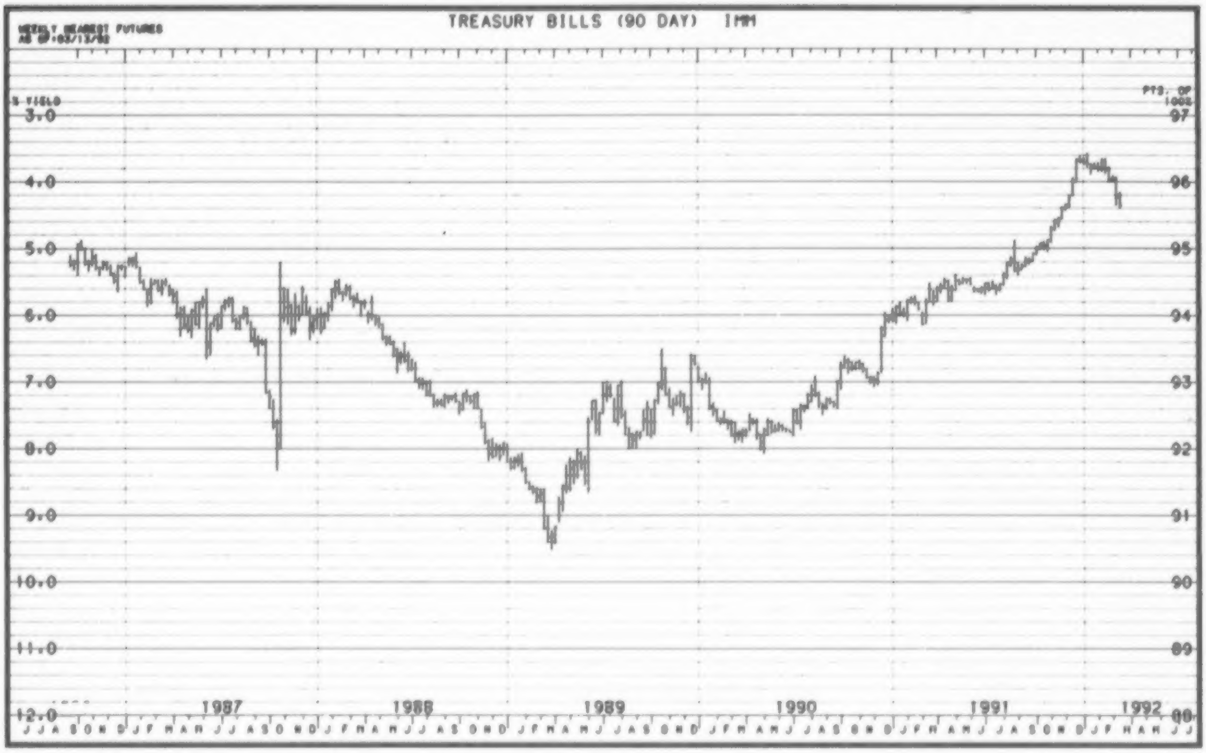
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	102.9	103.2	103.9	104.0	104.1	104.0	104.2	103.8	103.4	103.4	103.7	103.5	103.7
1985	103.4	103.3	103.1	103.3	103.5	103.3	103.2	102.7	102.1	102.9	103.4	103.6	103.2
1986	103.2	101.7	100.3	99.6	100.0	99.9	99.4	99.3	99.4	99.7	99.8	99.7	100.2
1987	100.5	101.0	101.2	101.9	102.6	103.0	103.5	103.8	103.7	104.1	104.2	104.2	102.8
1988	104.6	104.8	104.9	105.8	106.5	107.2	107.9	108.0	108.1	108.2	108.3	109.0	106.9
1989	110.5	110.8	111.5	112.3	113.2	112.9	112.8	112.0	112.3	112.7	112.7	113.0	112.2
1990[1]	114.9	114.4	114.2	114.1	114.6	114.3	114.5	116.5	118.3	120.8	120.1	118.7	116.3
1991[1]	119.0	117.2	116.2	116.0	116.5	116.4	116.1	116.2	116.0	116.4	116.4		

[1] Preliminary. *Source: Bureau of Labor Statistics* T.315

U.S. Consumer Price Index (Retail Price Index for All Items: Urban Consumers) 1982–84 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Average
1984	101.9	102.4	102.6	103.1	103.4	103.7	104.1	104.5	105.0	105.3	105.3	105.3	103.9
1985	105.5	106.0	106.4	106.9	107.3	107.6	107.8	108.0	108.3	108.7	109.0	109.3	107.6
1986	109.6	109.3	108.8	108.6	108.9	109.5	109.5	109.7	110.2	110.3	110.4	110.5	109.6
1987	111.2	111.6	112.1	112.7	113.1	113.5	113.8	114.4	115.0	115.3	115.4	115.4	113.6
1988	115.7	116.0	116.5	117.1	117.5	118.0	118.5	119.0	119.8	120.2	120.3	120.5	118.3
1989	121.1	121.6	122.3	123.1	123.8	124.1	124.4	124.6	125.0	125.6	125.9	126.1	124.0
1990[1]	127.4	128.0	128.7	128.9	129.2	129.9	130.4	131.6	132.7	133.5	133.8	133.8	130.7
1991[1]	134.6	134.8	135.0	135.2	135.6	136.0	136.2	136.6	137.2	137.4	137.8		

[1] Preliminary. *Source: Bureau of Labor Statistics* T.316



Average Open Interest of 13 Wk.[1] Treasury Bill Futures in Chicago In Thousands of Contracts

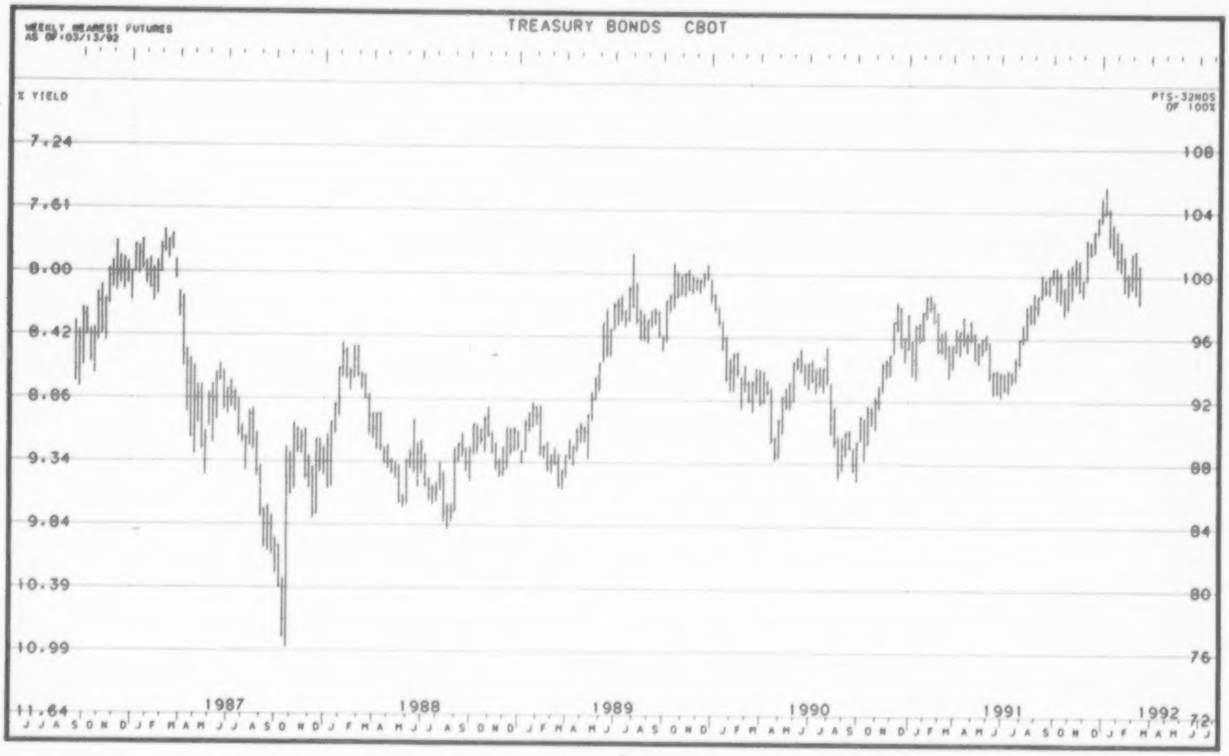
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1981	44,158	42,982	35,939	29,695	31,495	36,427	42,853	46,297	38,106	34,350	37,361	34,174
1982	33,765	33,854	37,029	41,262	49,754	43,235	48,025	60,055	55,414	48,690	48,006	49,035
1983	48,730	47,608	39,257	42,777	44,259	42,574	43,574	44,782	42,656	49,731	51,947	45,577
1984	44,814	50,417	47,490	51,299	58,668	47,626	45,713	43,931	42,313	42,337	48,923	42,866
1985	47,022	47,171	40,954	40,069	39,624	33,712	35,817	37,911	35,473	36,887	40,830	35,963
1986	37,365	43,008	48,572	51,145	43,394	36,479	40,676	40,819	37,532	36,107	37,940	36,271
1987	40,710	48,375	39,691	35,671	32,202	23,431	24,077	25,454	20,539	26,014	24,222	20,989
1988	19,571	22,956	21,460	26,134	28,166	19,081	21,812	21,626	21,374	21,930	24,711	26,923
1989	29,023	26,612	25,672	20,433	21,864	19,934	20,950	22,687	25,216	29,118	34,224	33,469
1990	39,168	38,358	27,668	31,274	25,128	21,171	26,524	37,903	35,723	46,974	53,284	50,146
1991	55,371	53,484	38,259	43,538	53,941	51,178	55,514	55,999	47,509	50,865	57,680	51,750

[1] 90-day U.S. Treas. Bill. *Source: International Monetary Market (Chicago)* T.322

Volume of Trading of 13 Wk.[1] Treasury Bill Futures in Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	446.6	414.4	408.5	407.6	426.1	511.0	487.8	482.0	525.8	516.0	509.5	496.5	5,631.3
1982	503.5	465.5	638.7	529.1	595.4	546.0	615.2	738.4	628.6	521.4	442.4	374.7	6,598.8
1983	302.2	337.9	361.4	308.5	331.4	366.2	283.9	371.1	273.5	309.8	275.7	268.5	3,790.0
1984	200.0	213.4	304.9	300.2	489.1	342.8	315.1	242.5	201.6	203.6	264.0	215.5	3,293.0
1985	231.3	245.4	314.5	217.9	206.2	205.6	180.6	165.8	206.8	159.9	142.1	138.1	2,413.0
1986	175.0	215.4	149.5	212.8	169.7	152.9	117.8	135.7	160.8	114.2	106.3	105.1	1,815.2
1987	137.9	218.8	151.8	197.6	207.8	125.5	97.5	125.4	110.1	262.2	161.0	131.6	1,927.0
1988	103.2	111.6	129.2	125.6	163.4	105.3	84.3	117.9	97.9	101.6	129.1	104.5	1,373.6
1989	109.6	146.5	143.2	119.2	126.3	101.4	89.3	126.9	135.9	149.1	130.1	124.9	1,502.4
1990	169.3	153.6	118.5	120.3	102.4	96.7	138.1	206.6	168.9	178.5	223.7	193.1	1,869.6
1991	252.9	197.9	166.8	164.0	188.2	173.3	141.7	223.2	111.0	110.8	140.8	141.6	2,012.2

[1] 90-day U.S. Treas. Bill. *Source: International Monetary Market (Chicago)* T.323



Average Open Interest of Treasury Bond Futures in Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	210,528	207,766	185,227	190,176	195,945	166,256	157,216	167,606	164,364	164,761	170,415	178,211
1983	172,930	165,131	148,170	148,017	141,917	140,684	157,193	155,511	148,115	166,725	186,617	186,063
1984	174,827	163,119	168,705	168,980	193,248	198,144	193,662	205,630	209,920	223,808	244,596	217,550
1985	196,826	223,282	224,553	215,742	224,351	209,985	209,823	229,284	229,382	279,083	315,082	307,137
1986	320,040	317,197	266,005	253,991	237,236	212,415	203,921	207,524	196,672	223,588	241,717	239,695
1987	256,822	286,198	237,005	285,491	297,998	250,315	272,633	303,192	336,976	383,640	337,855	293,160
1988	296,133	328,081	307,004	317,891	366,723	406,493	441,064	489,339	475,841	478,585	472,628	411,888
1989	395,874	366,704	303,891	308,850	330,016	312,318	325,851	321,493	283,133	301,719	355,555	314,252
1990	315,671	324,954	294,968	280,745	303,544	278,889	285,934	317,197	297,075	286,291	288,581	254,775
1991	257,229	279,378	250,028	283,473	279,443	254,983	273,774	325,303	310,110	304,198	317,445	301,604
1992												

Source: Chicago Board of Trade

T.317

Volume of Trading of Treasury Bond Futures in Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	1,266.4	1,306.1	1,413.9	1,259.4	1,408.2	1,254.8	1,145.5	1,669.5	1,474.4	1,644.0	1,545.2	1,352.3	16,739.7
1983	1,333.9	1,447.8	1,600.4	1,262.9	1,679.2	1,704.8	1,579.0	2,312.7	1,605.7	1,839.4	1,687.0	1,497.8	19,551
1984	1,475.7	1,891.3	2,629.4	2,068.7	3,373.8	2,593.9	2,691.7	2,792.2	2,556.6	2,924.2	2,781.2	2,184.9	29,963
1985	2,974	3,250	2,906	2,272	3,339	3,755	3,308	3,409	3,149	3,558	4,118	3,965	40,448
1986	4,640	5,220	4,445	5,115	4,783	4,486	4,114	4,175	4,638	3,853	3,595	3,534	52,599
1987	4,188	4,308	4,128	7,110	6,120	5,518	4,839	6,185	7,769	7,388	4,861	4,428	66,841
1988	5,550	5,765	6,088	4,984	5,570	7,495	5,133	6,346	5,641	6,136	6,431	5,171	70,307
1989	5,806	6,300	5,605	4,858	6,673	7,995	5,231	7,640	4,792	6,329	5,828	3,244	70,303
1990	7,215	7,438	7,175	5,653	6,189	5,279	4,895	8,855	4,939	6,659	6,570	4,691	75,559
1991	5,804	5,717	5,658	5,957	6,186	5,582	4,293	6,592	4,765	6,450	6,239	4,643	67,886
1992													

Source: Chicago Board of Trade

T.319

High, Low & Closing Prices of June 5-Yr. T-Notes Futures in Chicago In 64ths of 100%

Year of Delivery	Year Prior to Delivery							Delivery Year						Life of Delivery Range
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1989 High	—	—	—	96–46	97–30	97–55	96–30	96–24	96–14	95–00	96–06	97–33	99–30	99–30
Low	—	—	—	95–60	96–45	96–52	95–16	94–55	94–18	93–19	94–14	95–18	97–17	93–19
Close	—	—	—	96–46	97–16	96–52	95–34	95–55	94–42	94–20	95–62	97–26	98–34	—
1990 High	—	—	—	—	—	101–02	101–29	100–33	98–60	98–03	98–00	97–49	98–39	101–29
Low	—	—	—	—	—	100–62	100–24	98–02	97–29	96–50	95–35	95–30	97–33	95–30
Close	—	—	—	—	—	101–02	100–38	98–35	98–06	97–11	95–55	97–36	97–53	—
1991 High	—	—	—	—	—	100–14	101–21	101–24	101–57	100–52	101–08	101–19	100–54	101–57
Low	—	—	—	—	—	99–01	100–07	99–63	100–40	99–31	100–13	100–30	99–33	99–01
Close	—	—	—	—	—	100–01	100–49	100–62	100–44	100–33	100–61	101–00	100–03	—

Source: Chicago Board of Trade T.326

Average Open Interest of 5-Yr. T-Notes Futures in Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1988					2,545	5,292	10,584	11,424	12,677	18,403	24,569	34,267
1989	34,728	40,203	45,320	46,371	48,195	42,496	44,985	34,675	37,474	42,669	57,901	73,798
1990	81,705	74,568	74,999	60,841	59,417	56,485	54,004	64,100	75,955	78,370	82,981	93,549
1991	80,059	82,666	83,109	74,612	75,799	65,543	72,197	86,981	85,794	91,096	102,890	99,291
1992	116,322											

Source: Chicago Board of Trade T.325

Volume of Trading of 5-Yr. T-Notes Futures in Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1988					20.6	56.5	45.6	66.4	73.8	54.8	97.1	91.8	506.6
1989	91.1	156.8	128.1	89.2	167.3	162.0	142.3	205.2	121.2	148.3	253.4	116.9	1,782
1990	184.5	277.5	164.9	107.6	266.6	140.8	131.6	320.4	189.0	197.9	305.7	40.8	2,327
1991	220.5	318.5	252.3	181.4	307.6	232.4	179.7	385.4	243.9	291.5	419.9	353.1	3,386

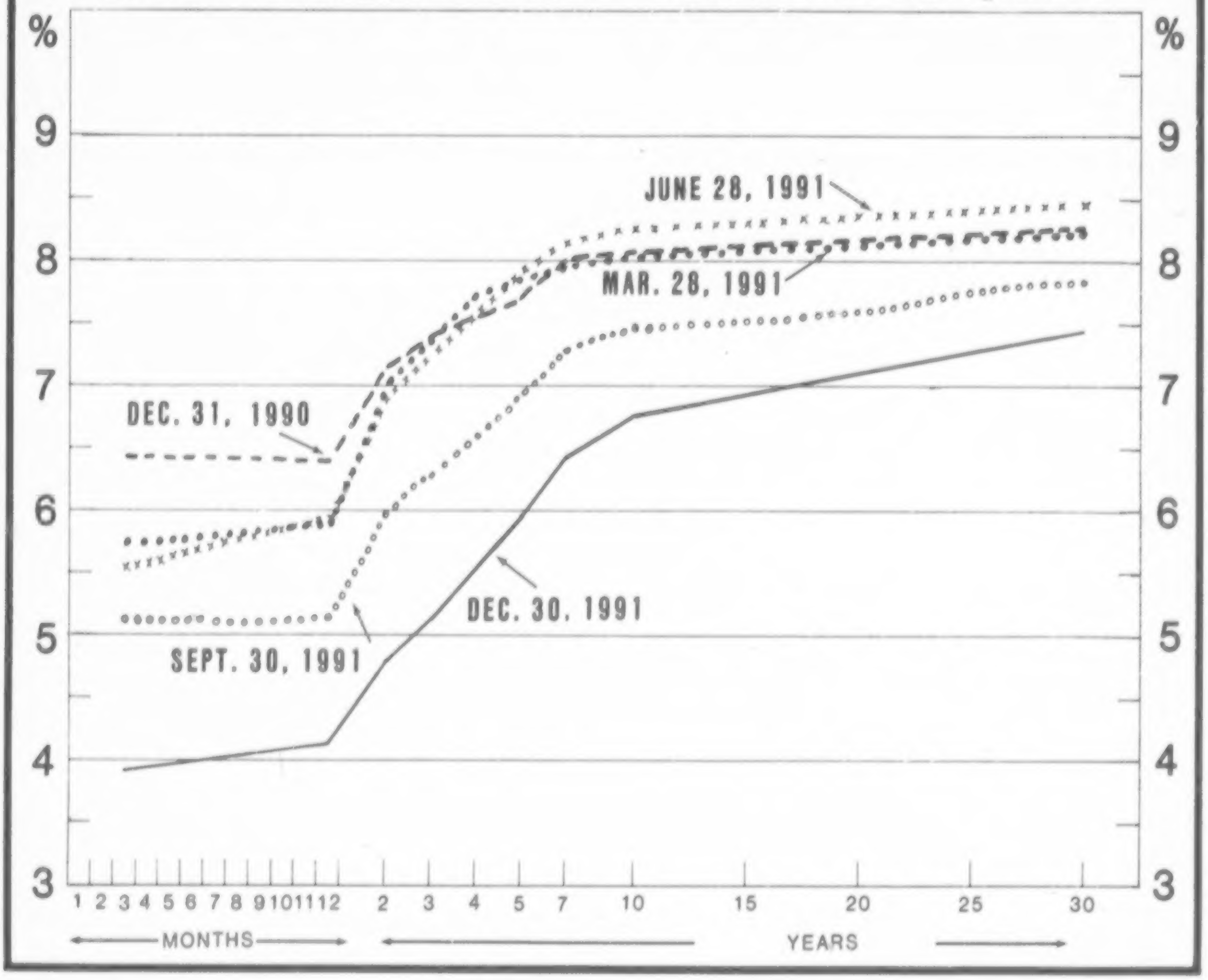
Source: Chicago Board of Trade T.324

High, Low & Closing Prices of June Treasury Bond Futures in Chicago In 32nds of 100%

Year of Delivery	Year Prior to Delivery							Delivery Year						Life of Delivery Range
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1984 High	74–29	73–05	71–12	72–02	75–15	70–31	70–20	71–06	70–26	68–22	67–00	64–31	63–21	77–28
Low	72–00	67–26	66–28	68–09	69–18	68–23	68–05	68–30	67–22	65–22	64–17	59–16	60–11	58–28
Close	73–03	68–16	68–12	71–23	69–19	70–17	69–15	70–07	68–07	66–07	64–22	60–05	61–19	—
1985 High	61–16	63–10	65–04	67–20	70–03	72–05	72–00	73–07	70–14	69–24	72–17	77–14	80–11	80–11
Low	58–05	58–00	62–29	63–12	65–19	68–10	69–15	69–09	66–10	67–08	68–23	70–21	77–13	56–25
Close	58–07	63–01	64–06	66–05	69–14	70–10	70–11	72–03	66–15	69–23	70–24	77–11	79–18	—
1986 High	76–07	76–00	75–05	74–29	76–17	79–25	84–25	85–10	96–01	102–12	105–15	101–11	98–01	105–15
Low	72–10	71–09	71–19	71–26	72–04	75–15	78–04	80–20	82–26	92–06	97–29	93–19	90–22	56–29
Close	74–05	72–09	74–02	73–14	76–01	79–15	84–08	84–03	94–00	102–10	100–24	93–28	96–13	—
1987 High	97–10	99–07	100–03	99–23	96–24	98–24	99–30	101–02	100–25	101–19	98–16	93–19	94–07	102–05
Low	88–12	92–16	93–01	90–04	91–21	93–24	96–24	97–09	97–03	97–13	88–13	87–04	89–05	63–12
Close	97–06	95–10	99–29	94–21	96–06	97–25	97–06	98–25	100–14	98–15	93–02	92–02	93–08	—
1988 High	90–29	90–05	88–17	84–30	87–05	88–25	88–09	93–00	94–17	94–11	91–04	88–06	90–22	99–12
Low	85–29	86–12	84–02	79–19	75–00	84–19	82–16	85–09	91–14	89–14	87–17	85–03	86–05	66–16
Close	88–27	86–22	84–25	80–02	85–25	85–28	86–30	92–30	93–20	90–02	87–29	85–26	87–23	—
1989 High	87–09	86–29	85–26	88–02	90–11	90–12	89–26	91–21	91–18	88–28	90–17	93–15	97–25	97–25
Low	83–08	83–04	82–02	84–05	87–16	86–09	86–27	87–24	87–12	86–09	87–25	88–07	92–23	73–11
Close	86–09	84–04	84–12	87–24	90–10	87–23	88–26	90–20	88–06	88–13	90–06	93–02	95–27	—
1990 High	97–16	98–29	100–11	97–11	100–15	100–00	100–15	98–21	94–30	94–01	93–28	93–07	95–10	100–15
Low	92–13	95–31	95–16	94–25	95–19	98–13	98–02	92–13	91–13	91–00	88–07	88–10	93–17	
Close	97–11	98–29	95–25	95–19	99–03	99–08	98–17	94–02	93–06	91–28	88–26	92–29	93–19	—
1991 High	94–03	94–02	94–14	88–26	90–28	94–07	97–14	97–01	98–07	95–25	97–11	97–04	95–25	90–04
Low	92–02	91–29	86–07	86–06	87–12	90–13	94–02	92–27	95–12	93–04	94–30	94–11	92–12	82–18
Close	93–17	93–26	88–02	88–19	90–08	94–06	95–09	95–25	95–17	95–15	96–13	95–24	93–09	—

Source: Chicago Board of Trade T.320

U.S. TREASURY YIELD CURVES FOR 1991



U.S. Industrial Production Index[1] (Seasonally Adjusted) 1987 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	85.1	85.8	86.1	85.2	86.2	86.1	85.6	85.3	85.5	86.0	85.7	85.6	85.7
1980	85.9	86.2	86.2	84.5	82.5	81.5	81.2	82.4	83.5	84.0	85.5	85.9	84.1
1981	85.2	85.4	85.7	85.0	85.6	86.1	87.1	86.9	86.5	85.8	84.8	84.1	85.7
1982	82.4	84.2	83.7	83.2	82.7	82.4	82.0	81.6	81.0	80.3	80.0	79.3	81.9
1983	80.8	80.7	81.3	82.3	83.2	83.7	85.3	86.5	87.9	88.6	88.8	89.2	84.9
1984	91.0	90.9	91.9	92.4	93.0	93.5	93.9	94.0	93.9	93.2	93.3	92.8	92.8
1985	93.1	93.8	94.1	94.5	94.7	94.4	94.1	94.5	95.0	94.2	94.6	95.6	94.4
1986	96.1	95.5	94.6	94.8	94.8	94.4	94.8	95.0	95.1	95.6	96.2	96.7	95.3
1987	96.5	97.6	98.2	98.3	99.2	100.1	100.8	101.0	100.9	102.3	102.2	102.6	100.0
1988	103.5	103.5	103.9	104.3	104.8	105.0	106.1	106.4	106.2	106.5	106.9	107.4	105.4
1989[2]	107.7	107.6	107.7	108.6	108.3	108.4	107.8	108.2	108.2	107.7	108.1	108.6	108.1
1990[2]	107.5	108.5	108.9	108.8	109.4	110.1	110.4	110.5	110.4	109.9	108.3	107.2	109.2
1991[2]	106.6	105.7	105.0	105.5	106.4	107.3	108.1	108.0	108.2	108.2	107.8		

[1] Total Index of the Federal Reserve Index of Quantity Output. [2] Preliminary. *Source: Federal Reserve System* T.318

High, Low & Closing Prices of June 13 Wk. Treasury Bill Futures in Chicago In Points of 100%

Year of Delivery		Year Prior to Delivery									Delivery Year					Life of Delivery Range
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1982	High	89.20	87.81	88.47	87.86	87.52	87.00	87.61	89.54	89.42	87.85	87.48	88.32	88.16	88.94	88.46	91.26
	Low	87.09	86.03	87.40	86.91	85.95	85.48	85.53	87.42	86.93	85.85	85.45	86.46	86.67	87.41	87.16	85.45
	Close	87.10	87.73	87.92	87.21	86.08	85.60	87.55	89.19	87.76	86.90	86.92	86.83	87.88	88.57	87.18	—
1983	High	87.37	87.82	87.56	87.93	89.12	89.66	91.19	91.43	91.94	92.26	92.40	92.28	92.04	92.22	91.65	92.40
	Low	86.45	87.00	86.32	86.75	87.63	87.95	89.29	90.57	90.67	91.41	91.26	91.12	91.20	91.28	91.12	85.83
	Close	87.29	87.64	86.77	87.72	88.11	89.63	90.70	90.61	91.92	91.45	92.19	91.20	91.98	91.30	91.15	—
1984	High	91.23	91.47	90.60	90.44	90.06	90.51	90.66	90.57	90.47	90.82	90.78	90.48	90.18	90.36	90.37	91.47
	Low	90.63	90.33	90.11	89.55	89.30	89.57	90.32	90.13	90.00	90.32	90.28	89.79	89.77	89.44	90.12	86.50
	Close	91.23	90.34	90.39	89.60	89.59	90.46	90.39	90.39	90.44	90.72	90.38	89.97	89.94	90.18	90.28	—
1985	High	88.92	88.60	87.95	88.47	88.90	89.51	90.12	91.13	91.46	91.81	91.47	91.49	92.25	92.93	93.19	93.19
	Low	88.46	87.16	87.14	87.17	88.28	88.53	89.09	89.45	90.69	91.14	90.78	90.39	91.26	91.98	92.95	87.14
	Close	88.52	87.25	87.20	88.28	88.69	89.15	90.10	90.70	91.16	91.54	90.80	91.41	92.01	92.91	93.09	—
1986	High	90.64	91.68	92.24	92.41	92.17	92.32	92.59	92.91	93.30	93.18	93.53	94.07	94.71	94.20	93.74	94.71
	Low	89.86	90.36	91.58	91.50	91.51	91.74	92.03	92.41	92.72	92.63	92.93	93.38	93.96	93.68	93.48	86.43
	Close	90.37	91.66	91.89	91.62	91.93	92.19	92.51	92.91	93.14	93.13	93.39	94.07	94.11	93.71	93.49	—
1987	High	94.38	93.89	94.06	94.37	94.89	95.08	94.90	94.91	94.95	94.97	94.69	94.67	94.38	94.29	94.40	95.08
	Low	93.55	93.17	92.94	93.91	94.22	93.46	94.50	94.55	94.62	94.58	94.18	94.20	93.68	93.66	94.13	90.41
	Close	93.78	93.22	94.03	94.31	94.89	94.57	94.75	94.83	94.66	94.60	94.62	94.31	93.88	94.22	94.35	—
1988	High	94.06	93.05	93.40	93.58	93.38	92.84	94.10	93.59	93.79	94.20	94.45	94.40	94.30	93.88	93.51	94.45
	Low	92.77	91.95	92.39	93.05	92.71	92.02	91.28	92.91	93.06	93.43	94.04	93.98	93.82	93.37	93.48	91.28
	Close	92.98	92.70	93.29	93.11	92.82	92.07	93.04	93.58	93.70	94.18	94.35	94.19	93.87	93.47	93.49	—
1989	High	93.20	92.91	92.96	92.80	92.62	92.72	92.89	92.94	92.34	91.89	91.68	91.08	91.87	91.98	—	93.48
	Low	92.84	92.42	92.48	92.35	91.97	92.15	92.51	92.09	91.79	91.62	90.80	90.48	90.90	91.35	—	90.48
	Close	92.90	92.54	92.75	92.41	92.19	92.58	92.88	92.34	91.89	91.66	90.91	90.83	91.70	91.36	—	—
1990	High	91.87	92.46	93.09	93.58	93.53	93.03	93.53	93.66	93.65	93.33	92.78	92.59	92.53	92.45	92.38	93.66
	Low	91.40	91.69	92.40	92.97	92.52	92.52	92.60	93.06	93.30	92.63	92.43	92.09	91.97	91.92	92.19	
	Close	91.86	92.41	93.01	93.44	92.62	92.60	93.21	93.47	93.33	92.68	92.61	92.25	92.06	92.26	92.20	—
1991	High	92.13	92.26	92.53	92.88	93.12	93.32	93.69	93.88	94.13	94.33	94.52	94.49	94.58	94.62	94.46	94.62
	Low	91.53	91.52	92.23	92.29	92.43	92.77	93.21	93.66	93.66	94.05	94.11	93.95	94.20	94.45	94.32	91.52
	Close	91.61	92.22	92.45	92.87	92.84	93.23	93.66	93.78	94.07	94.18	94.13	94.39	94.53	94.46	94.44	—

Source: International Monetary Market (Chicago) T.321

Volume of Trading of T-Note (10-Yr.) Futures in Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	59.7	110.5	126.8	105.3	199.1	145.1	147.2	162.8	139.5	149.2	166.0	150.7	1,662
1985	171.8	216.0	215.9	175.8	274.9	266.9	219.4	282.9	212.7	234.3	297.5	292.5	2,860
1986	269.7	401.4	383.1	381.7	434.8	470.3	309.7	363.1	459.5	319.9	328.1	305.2	4,426
1987	304.9	358.3	347.6	643.8	541.3	405.1	269.6	446.0	512.9	662.0	369.4	392.8	5,254
1988	335.3	462.8	420.6	298.8	467.8	469.6	327.4	566.0	455.4	383.2	537.4	476.7	5,201
1989	450.5	547.9	468.3	431.6	625.6	637.3	453.0	629.6	465.8	555.8	516.7	327.4	6,110
1990	491.3	650.5	480.9	381.1	638.7	427.4	415.0	703.0	399.3	449.6	574.3	442.6	6,054
1991	507.7	519.6	508.3	466.5	566.9	456.6	318.9	705.9	467.2	573.2	661.3	591.4	6,344

Source: Chicago Board of Trade T.0565B

Volume of Trading of Eurodollar Futures in Chicago In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	104.8	127.4	235.4	202.2	434.7	448.1	438.6	354.5	435.3	491.1	532.4	388.4	4,193
1985	524.7	723.6	877.2	764.7	753.7	891.5	798.0	697.5	769.1	694.3	695.4	710.7	8,901
1986	888.5	825.1	627.9	933.7	982.6	1,018.1	755.3	847.2	1,288.7	1,046.7	836.3	774.8	10,825
1987	1,072	1,472	1,197	2,562	1,825	1,760	1,292	1,514	2,495	2,849	1,202	1,177	20,416
1988	1,466	1,681	1,635	1,575	1,830	2,288	1,604	1,893	1,957	1,586	2,236	1,952	21,705
1989	2,257	3,107	3,848	4,471	3,941	4,116	3,193	3,980	2,977	3,971	2,914	2,043	40,818
1990	3,244	2,459	2,727	2,566	3,132	2,473	2,947	3,857	2,730	2,898	2,982	2,680	34,696
1991	2,859	2,635	3,445	3,208	2,458	2,972	2,629	4,035	3,000	3,505	3,331	3,197	37,274

Source: International Monetary Market (IMM)—Chicago Mercantile Exchange T.0564B

Average Open Interest of Eurodollar Futures in Chicago In Contracts

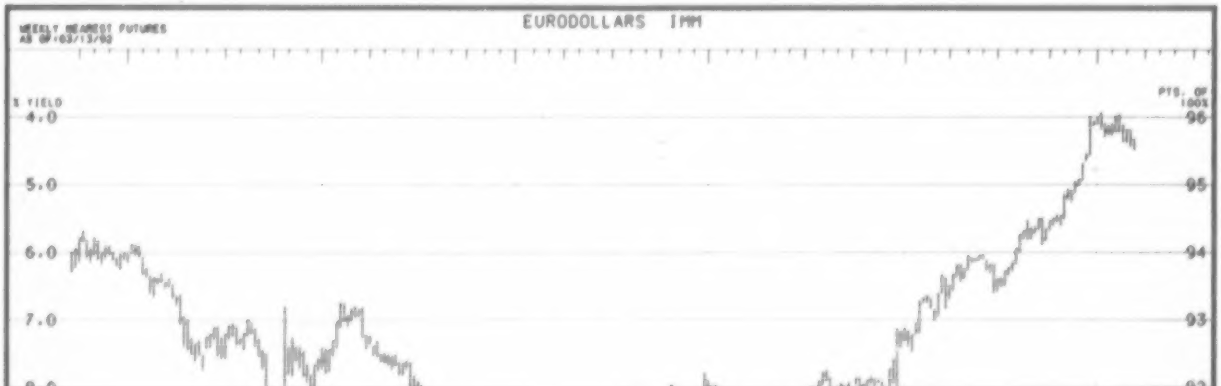
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	135,703	151,853	148,114	157,288	171,319	164,950	163,345	186,915	213,502	219,995	228,157	219,868
1987	232,311	267,832	229,482	263,086	291,824	269,490	279,309	316,878	361,431	379,188	354,892	323,502
1988	317,384	358,496	340,855	375,951	422,663	421,907	440,567	510,188	509,180	477,860	519,843	566,951
1989	574,799	672,315	731,344	749,690	756,850	720,434	690,204	713,979	637,947	591,502	663,588	661,925
1990	638,515	662,860	653,188	616,948	662,787	676,324	690,639	740,018	697,837	678,167	728,362	664,136
1991	630,859	722,741	741,075	767,644	857,350	835,233	797,940	883,085	916,708	949,479	1,054,742	1,067,187

Source: International Monetary Market (IMM)—Chicago Mercantile Exchange T.0564A

High, Low & Closing Prices of June Eurodollar Futures in Chicago In Points of 100%

Year of Delivery		Year Prior to Delivery									Delivery Year						Life of Delivery Range
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1988	High	92.93	91.78	92.10	92.21	92.01	91.48	93.80	92.16	92.32	92.79	93.14	93.10	92.70	92.50	92.40	93.80
	Low	91.44	90.60	91.13	90.95	91.36	90.65	89.79	91.54	91.60	92.00	92.71	92.58	92.37	92.19	92.24	89.79
	Close	91.78	91.47	91.89	91.76	91.46	90.74	91.74	92.03	92.20	92.76	93.00	92.72	92.41	92.23	92.38	—
1989	High	91.71	91.42	91.58	91.42	91.16	91.35	91.51	91.58	91.00	90.60	90.43	89.69	90.35	90.77	90.85	92.12
	Low	91.35	90.97	91.08	90.93	90.50	90.66	91.15	90.67	90.50	90.30	89.30	88.76	89.35	89.91	90.50	88.76
	Close	91.39	91.03	91.36	90.99	90.69	91.19	91.51	90.99	90.56	90.43	89.47	89.30	90.15	90.54	90.56	—
1990	High	90.60	91.13	91.73	92.30	92.35	91.77	92.15	92.45	92.44	92.16	91.71	91.58	91.55	91.64	91.73	92.45
	Low	89.77	90.23	90.90	91.69	91.37	91.24	91.37	91.85	92.04	91.50	91.41	91.18	91.08	91.08	91.60	
	Close	90.43	90.95	91.69	92.24	91.44	91.39	92.00	92.31	92.16	91.60	91.59	91.31	91.19	91.60	91.69	—
1991	High	91.04	91.17	91.64	92.10	92.19	91.96	92.30	92.59	92.95	93.06	93.49	93.55	93.94	93.96	93.89	93.96
	Low	90.43	90.38	91.15	91.45	91.37	91.63	91.93	92.25	92.50	92.60	93.00	93.07	93.43	93.85	93.69	89.91
	Close	90.51	91.16	91.64	92.09	91.86	91.88	92.26	92.47	92.89	93.00	93.26	93.48	93.92	93.91	93.81	—
1992	High																
	Low																
	Close																

Source: International Monetary Market (IMM)—Chicago Mercantile Exchange T.0564



Average Open Interest of T-Note (10-Yr.) Futures in Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	58,926	56,177	55,093	64,924	68,797	71,033	72,033	78,281	88,939	82,672	75,139	77,631
1988	76,066	75,884	73,083	75,836	78,038	84,349	84,612	101,470	96,821	91,811	89,307	74,602
1989	76,964	84,605	78,966	86,661	88,511	76,364	77,211	76,538	71,138	82,844	82,149	72,238
1990	73,155	82,211	76,939	76,030	82,174	78,498	71,413	75,644	72,900	67,309	73,744	76,697
1991	72,621	79,355	79,413	71,451	84,203	81,884	82,527	94,379	96,836	93,187	95,450	97,063

Source: Chicago Board of Trade

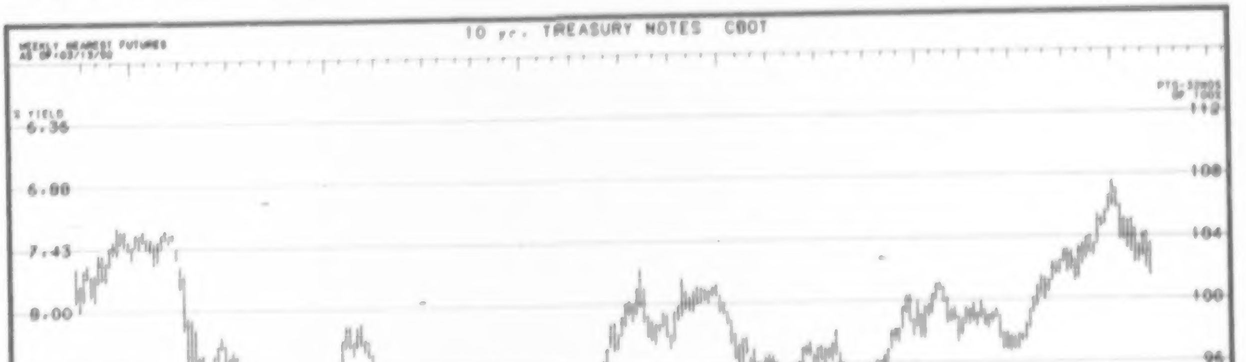
T.0565A

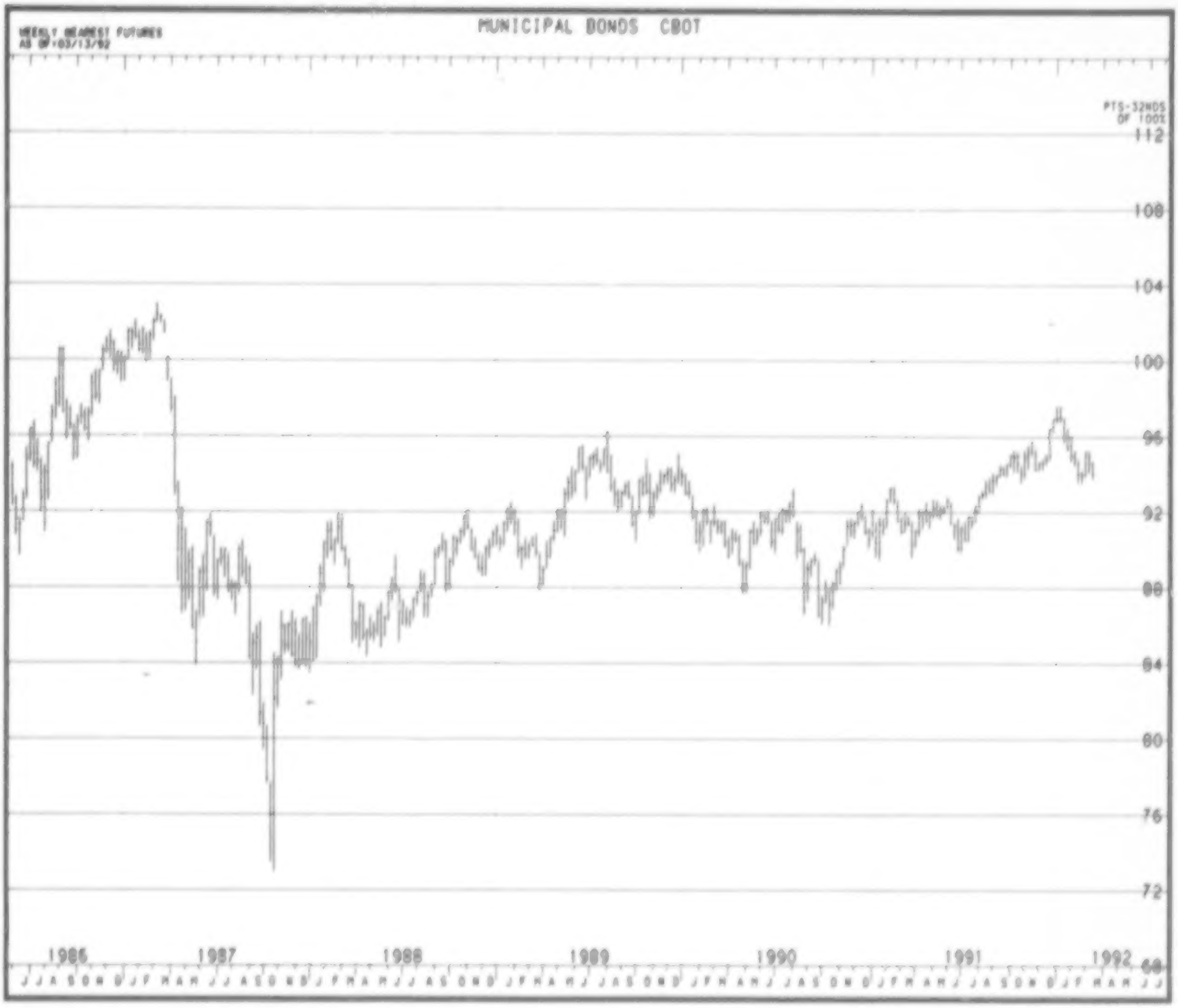
High, Low & Closing Prices of June T-Note Futures in Chicago In 32nds of 100%

Year of Delivery		Year Prior to Delivery							Delivery Year						Life of Delivery Range
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1987	High		101–14	102–21	105–00	101–18	102–20	103–21	104–11	104–05	104–15	102–09	98–01	98–10	105–00
	Low	—	98–00	98–29	97–31	99–00	100–12	102–00	102–19	102–05	101–18	95–02	93–06	94–22	93–06
	Close	—	99–21	102–21	99–24	101–15	102–08	102–14	103–13	103–31	102–10	97–24	96–09	97–22	—
1988	High	—	—	92–25	90–23	92–17	93–14	93–10	97–04	98–04	98–09	95–31	94–00	95–15	98–09
	Low	—	—	90–29	87–19	83–30	91–04	89–25	91–24	96–05	94–27	93–20	91–15	92–10	83–30
	Close	—	—	91–00	87–19	91–24	91–23	92–26	97–03	97–23	95–13	93–29	92–02	93–00	—
1989	High	92–28	92–12	91–26	93–19	95–06	95–02	94–02	94–09	94–13	92–15	93–30	96–11	98–26	98–26
	Low	89–31	90–15	89–24	90–30	93–17	92–05	92–03	91–27	91–06	90–13	91–20	92–16	95–23	89–24
	Close	92–08	90–28	90–29	93–19	95–05	93–00	92–19	93–21	91–29	91–30	93–20	95–31	97–24	—
1990	High	—	—	98–08	98–21	101–06	100–23	101–04	99–28	97–21	96–23	96–20	96–07	97–15	101–06
	Low	—	—	97–18	98–21	98–25	99–16	99–13	95–26	95–05	94–25	92–29	92–26	95–27	92–26
	Close	—	—	98–01	98–21	99–26	100–15	99–23	96–26	96–10	95–14	93–08	95–30	96–09	—
1991	High	—	—	—	94–07	95–20	97–26	99–23	99–20	100–21	98–31	99–26	99–28	99–00	100–21
	Low	—	—	—	92–20	93–15	95–21	97–21	97–06	98–20	97–03	98–09	98–03	96–25	92–20
	Close	—	—	—	94–04	95–07	97–21	98–14	98–31	98–24	98–24	99–09	99–03	97–14	—
1992	High														
	Low														
	Close														

Source: Chicago Board of Trade

T.0565



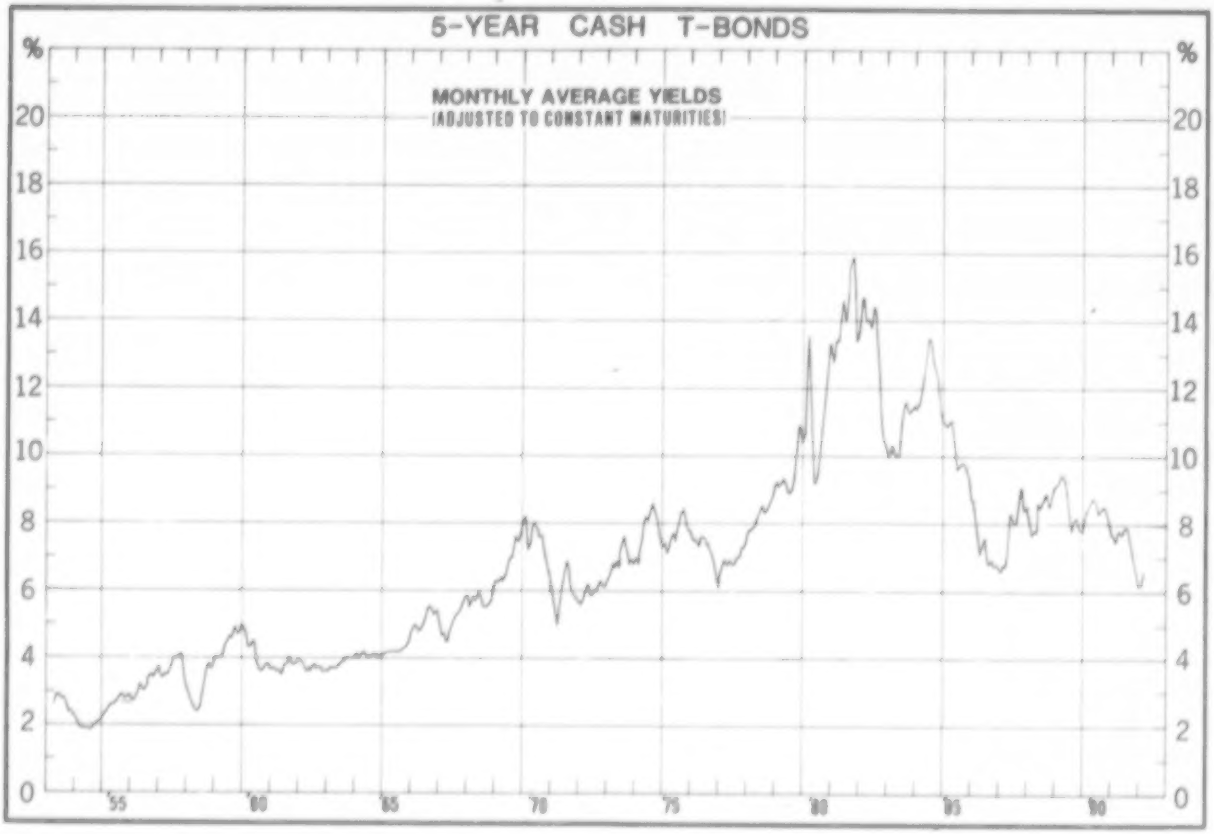


U.S. Federal Funds Rate In Percent

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1976	4.87	4.77	4.84	4.82	5.29	5.48	5.31	5.29	5.25	5.03	4.95	4.65	5.05
1977	4.61	4.68	4.69	4.73	5.35	5.39	5.42	5.90	6.14	6.47	6.51	6.56	5.54
1978	6.70	6.78	6.79	6.89	7.36	7.60	7.81	8.04	8.45	8.96	9.76	10.03	7.93
1979	10.07	10.06	10.09	10.01	10.24	10.29	10.47	10.94	11.43	13.77	13.18	13.78	11.19
1980	13.82	14.13	17.19	17.61	10.98	9.47	9.03	9.61	10.87	12.81	15.85	18.90	13.36
1981	19.08	15.93	14.70	15.72	18.52	19.10	19.04	17.82	15.87	15.08	13.31	12.37	16.38
1982	13.22	14.78	14.68	14.94	14.45	14.15	12.59	10.12	10.31	9.71	9.20	8.95	12.26
1983	8.68	8.51	8.77	8.80	8.63	8.98	9.37	9.56	9.45	9.48	9.34	9.47	9.09
1984	9.56	9.59	9.91	10.29	10.32	11.06	11.23	11.64	11.30	9.99	9.43	8.38	10.23
1985	8.35	8.50	8.58	8.27	7.97	7.53	7.88	7.90	7.92	7.99	8.05	8.27	7.41
1986	8.14	7.86	7.48	6.99	6.85	6.92	6.56	6.17	5.89	5.85	6.04	6.91	6.81
1987	6.43	6.10	6.13	6.37	6.85	6.73	6.58	6.73	7.22	7.29	6.69	6.77	6.66
1988	6.83	6.58	6.58	6.87	7.09	7.51	7.76	8.01	8.19	8.30	8.35	8.76	7.57
1989	9.12	9.36	9.85	9.84	9.81	9.53	9.24	8.99	9.02	8.84	8.55	8.45	9.22
1990	8.23	8.24	8.28	8.26	8.18	8.29	8.15	8.13	8.20	8.11	7.81	7.31	8.10
1991	6.91	6.25	6.12	5.91	5.78	5.90	5.82	5.66	5.45	5.21	4.81		

Source: U.S. Dept. of Commerce.

T.318a



U.S. Money Supply M1 in 1982 Dollars In Billions of Dollars

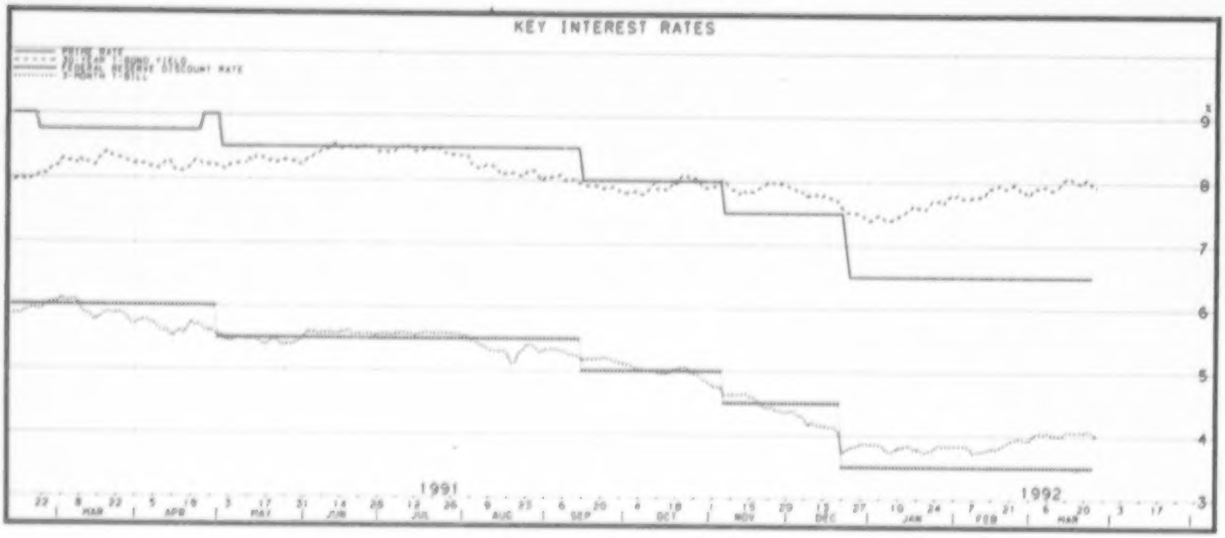
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	496.1	496.0	497.7	498.2	499.3	502.3	501.3	500.5	502.4	499.3	501.6	504.9	500.0
1985	507.8	511.4	512.0	513.3	517.1	523.0	527.3	534.1	539.6	540.4	541.7	546.7	526.2
1986	545.5	551.3	562.1	569.4	577.7	583.2	591.5	599.0	603.5	609.0	618.0	633.0	585.4
1987	632.7	631.0	630.7	636.8	635.9	629.8	629.5	629.2	629.5	635.3	630.9	628.0	632.7
1988	630.4	630.8	631.8	634.7	632.0	634.4	636.7	634.5	633.0	631.4	630.8	631.7	632.7
1989[1]	625.0	622.9	619.0	612.0	605.0	601.6	604.0	603.0	605.5	606.7	605.4	607.2	609.9
1990[1]	600.8	602.6	602.4	603.4	601.0	600.9	598.4	598.6	598.8	594.2	593.6	593.4	599.6
1991[1]	591.8	597.4	602.6	600.6	605.7	609.2	608.7	611.7	612.2	618.2	623.5		

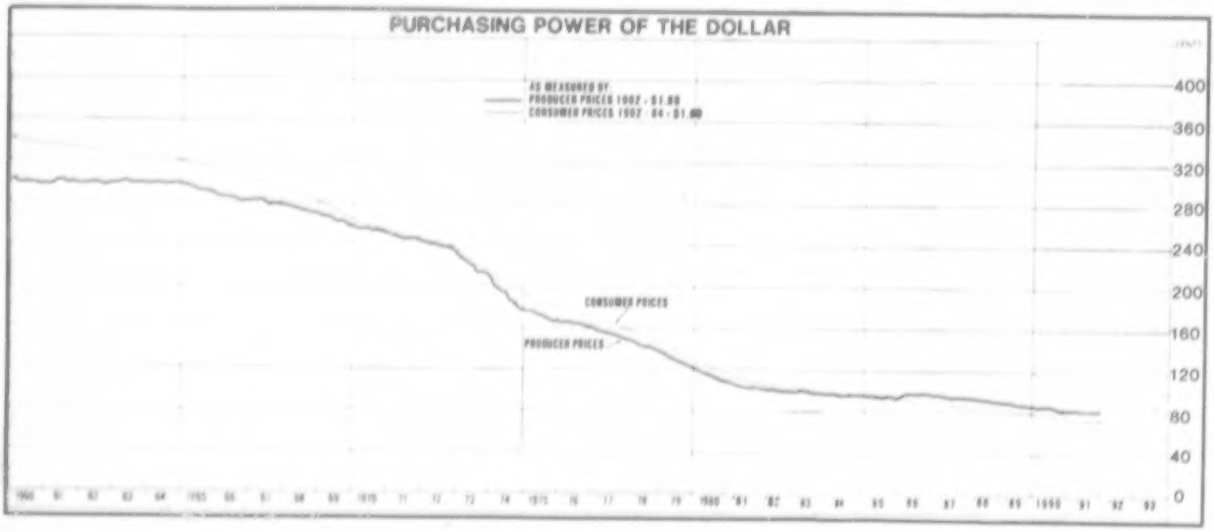
[1] Preliminary. *M1*—This measure is currency, travelers checks, plus demand deposits at commercial banks and interest-earning checkable deposits at all depository institutions. *Source: Federal Reserve System* T.327

U.S. Money Supply M2 in 1982 Dollars In Billions of Dollars

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	1,977	2,013	2,028	2,029	2,035	2,045	2,050	2,054	2,061	2,069	2,076	2,082	2,043
1984	2,078	2,086	2,093	2,096	2,102	2,111	2,112	2,116	2,125	2,129	2,147	2,166	2,114
1985	2,186	2,196	2,195	2,188	2,199	2,219	2,230	2,245	2,255	2,256	2,255	2,262	2,224
1986	2,259	2,274	2,308	2,334	2,351	2,361	2,384	2,399	2,409	2,424	2,435	2,451	2,363
1987	2,450	2,410	2,432	2,431	2,424	2,420	2,421	2,422	2,429	2,435	2,429	2,429	2,430
1988	2,436	2,449	2,456	2,461	2,459	2,462	2,461	2,457	2,452	2,446	2,454	2,454	2,454
1989[1]	2,437	2,437	2,433	2,417	2,405	2,412	2,424	2,440	2,447	2,450	2,455	2,461	2,435
1990[1]	2,442	2,448	2,448	2,451	2,444	2,437	2,432	2,425	2,418	2,406	2,396	2,392	2,431
1991[1]	2,385	2,396	2,413	2,414	2,416	2,414	2,400	2,393	2,385	2,388	2,387		

[1] Preliminary. *M2*—This measure adds to M1 overnight repurchase agreements (RP's) issued by commercial banks and certain overnight Eurodollars (those issued by Caribbean branches of member banks) held by U.S. nonbank residents, general purpose and broker/dealer money market mutual fund shares (MMMF), and savings and small-denomination time deposits. *Source: Federal Reserve System* T.328





U.S. Gross National Product, National Income, and Personal Income In Billions of Current Dollars[1]

Year	Gross National Product I	II	III	IV	Annual Avg.	National Income I	II	III	IV	Annual Avg.	Personal Income I	II	III	IV	Annual Avg.
1981	2,979	3,018	3,100	3,114	3,053	2,388	2,415	2,483	2,487	2,444	2,441	2,485	2,568	2,591	2,521
1982	3,113	3,160	3,179	3,213	3,166	2,483	2,514	2,528	2,548	2,518	2,614	2,656	2,684	2,729	2,671
1983	3,266	3,367	3,444	3,546	3,406	2,599	2,686	2,742	2,852	2,720	2,753	2,813	2,847	2,942	2,839
1984	3,675	3,754	3,808	3,852	3,772	2,962	3,009	3,047	3,096	3,029	3,034	3,075	3,138	3,188	3,109
1985	3,926	3,979	4,047	4,108	4,015	3,162	3,209	3,252	3,313	3,234	3,263	3,308	3,332	3,399	3,325
1986	4,181	4,195	4,253	4,297	4,232	3,363	3,395	3,419	3,473	3,413	3,457	3,510	3,540	3,598	3,526
1987	4,392	4,472	4,552	4,648	4,516	3,550	3,613	3,687	3,792	3,660	3,672	3,720	3,783	3,891	3,766
1988	4,667	4,710	4,739	4,789	4,726	3,864	3,949	4,022	4,104	3,985	3,951	4,033	4,112	4,186	4,071
1989[2]	4,814	4,832	4,848	4,869	4,841	4,177	4,217	4,232	4,267	4,245	4,302	4,363	4,403	4,469	4,384
1990[2]	4,124	4,901	4,909	4,878	4,895	4,350	4,461	4,472	4,507	4,460	4,563	4,655	4,719	4,765	4,680
1991[2]	4,844	4,848	4,872			4,490	4,531	4,560			4,768	4,821	4,853		

[1] Seasonally adjusted at annual rates. [2] Preliminary. *Source: U.S. Dept. of Commerce* T.329

Interest Rates, Worldwide

The major central banks pursued divergent monetary policies during 1991. Germany's Bundesbank was the most restrictive, as it pushed key interest rates higher to cool inflationary pressures or the perception thereof. The U.S. Federal Reserve was the most aggressive, lowering rates in a stepladder pattern in an effort to jump-start the economy. Japan's central bank also implemented easier policies, although it seemed to do so reluctantly. In either case, the central banks opted to adjust interest rates mainly for their own country's economic needs and not for the express purpose of influencing foreign-exchange parities, though the two goals are interrelated.

Economic priorities changed somewhat in 1991, especially in the U.S., where economic growth failed to reach expectations. The Fed misread the economy's recovery potential and until late 1991 pursued an interest-rate policy that clearly was not working. Typically, the Fed's economic priority has been containing inflation and to a much lesser degree supporting the dollar's value, as a weaker dollar is seen as inherently inflationary. The economy's malaise, if not also increasing political pressure because of declining consumer confidence, made economic growth the Fed's top priority in 1991, and it was expected to remain so well into 1992, or at least until the Administration's political apprehensions eased.

The year 1991 started with downward pressure on U.S. interest rates, as the major commercial banks cut the prime rate to 9.5 percent, down 50 basis points. In early February, the Fed lowered its bellwether discount rate to 6 percent from 6.5 percent and then to 5.5 percent in early May (along with a cut in the targeted funds rate to 5.75 percent, with the latter at 5.5 percent by mid-summer). Two more cuts of 50 basis points in the discount rate were made by the Fed, before a full 1 percent slash in the discount rate just before Christmas. The latter was the largest cut since 1981. At year-end 1991, the discount rate was at 3.5 percent, a 27-year low. And the prime was at 6.5 percent, down 3.5 percentage points from a year earlier.

A case could be made that the Fed's late-1991 action was somewhat panicky. Nonetheless, the Fed wanted to sidetrack some of the stimulative fiscal policies that were being considered. The Fed was concerned that some of these policies would increase the nation's record federal deficit and inflation (which would prevent a meaningful slide in longer term rates, over which the Fed has little direct control). If the economy failed to improve by mid-1992, a 3 percent discount and 6 percent prime were likely.

German interest rates firmed during 1991, especially late in the year, in an attempt by the Bundesbank to bring the inflation rate to under 4 percent in 1992. The year finished with the Lombard rate raised an unexpectedly large 1/2 percentage point to 9.75 percent, while the discount rate was lifted 1/2 percentage point to 8 percent. Germany's Lombard rate is the rate at which banks can borrow emergency funds from the Bundesbank and acts as an effective ceiling on overnight rates, while the discount rate is the cheapest form of bank financing.

In either case, the Bundesbank's late-1991 action firmed key rates in much of Europe at year-end. In the Netherlands, the key money-market intervention rate rose 50 basis points to 9.5 percent. Austria's central bank lifted its Lombard rate to 9.75 percent and its discount rate to 8 percent. In Denmark, the commercial bank borrowing rate went to 10 percent from 9.5 percent. The U.K. had little choice but to follow Germany's lead and raise its three-month interbank rate to 11 percent, which was 50 basis points over the Bank of England's base rate.

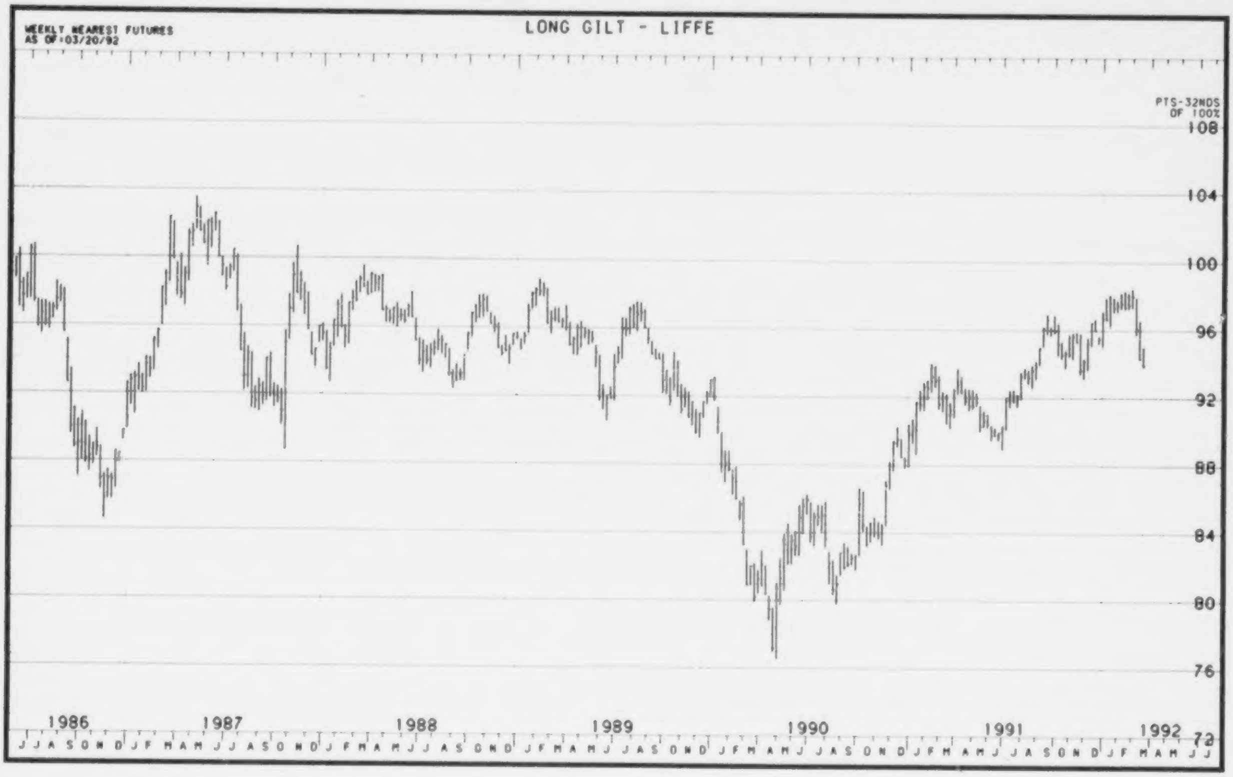
As implementation of the cohesive monetary system nears, the European economies now basically have to follow along in rachet fashion any monetary policy changes by the more important central banks. A European nation that lifts interest rates firms its own currency and puts pressure on other nations to follow suit or devalue. In either case, the Bundesbank apparently felt that its year-end 1991 restrictive policy would not seriously threaten its economy during 1992. Other European nations, however, were not that optimistic.

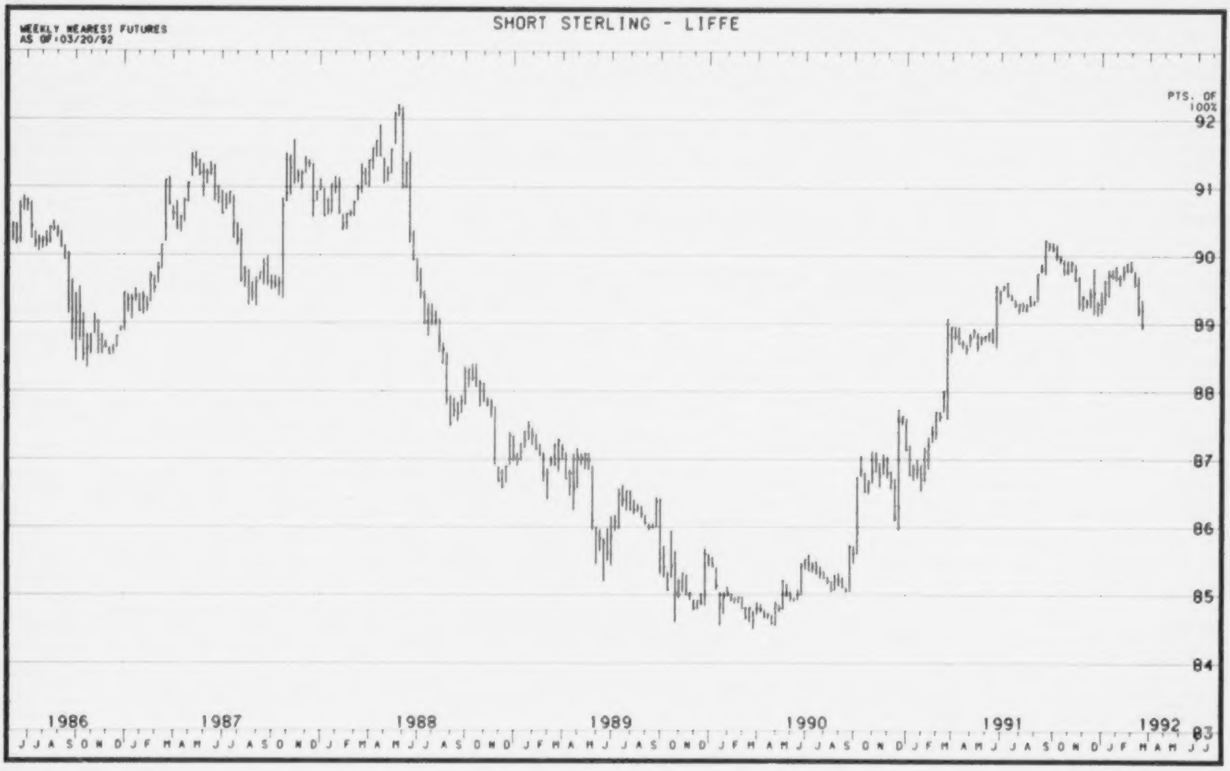
In Japan, key lending rates declined in 1991. In July, the Bank of Japan lowered its discount rate 1/2 percentage point to 5.5 percent, followed by another 50 basis point cut in November, and then a third cut at year-end that carried the discount rate to 4.5 percent. A slowing of Japan's economy and soaring bankruptcies forced the central bank into an easier stance, with indications that still further cuts were likely during 1992. It was hoped that the easier monetary policy would lessen the bearish pressure on Japan's stock market, for which 1991 was disappointing, as scandal rocked year.

Australia's central bank lowered its key lending rates during 1991, at a time when inflationary pressures were budding, suggesting that the action was more politically significant than reflective of a disinflationary economic policy.

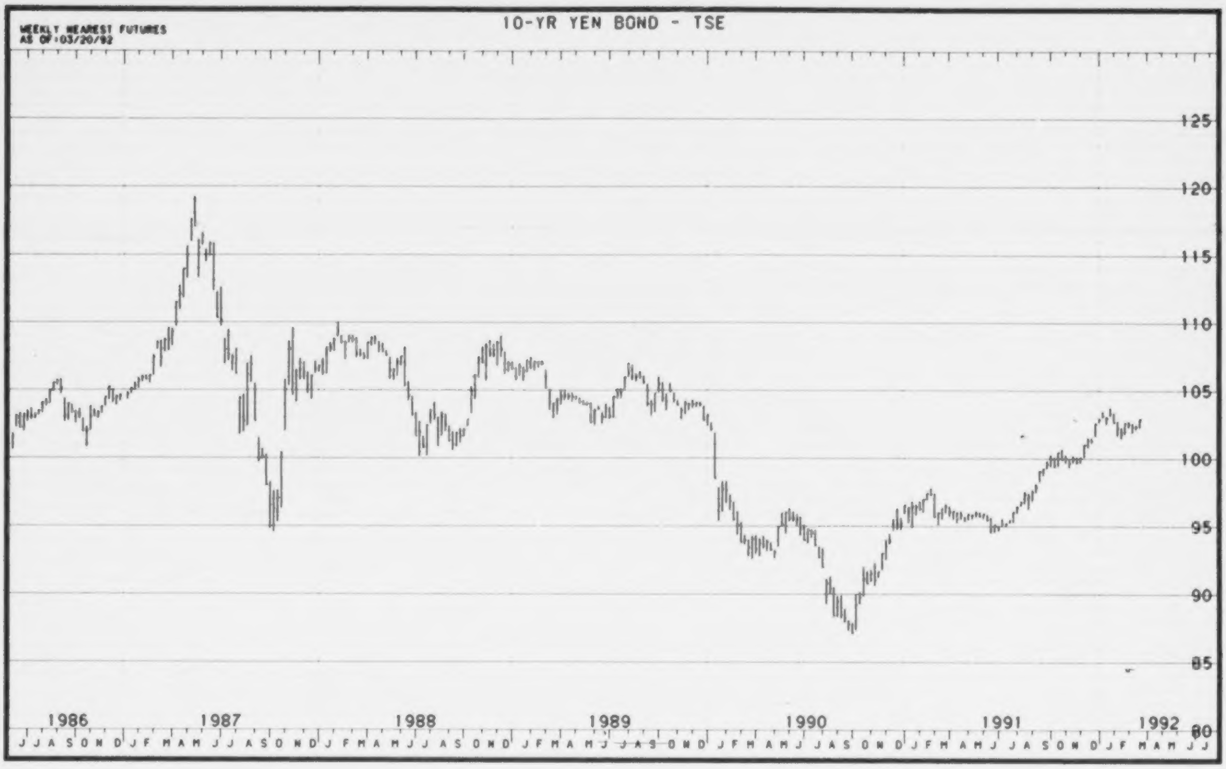
Futures Markets

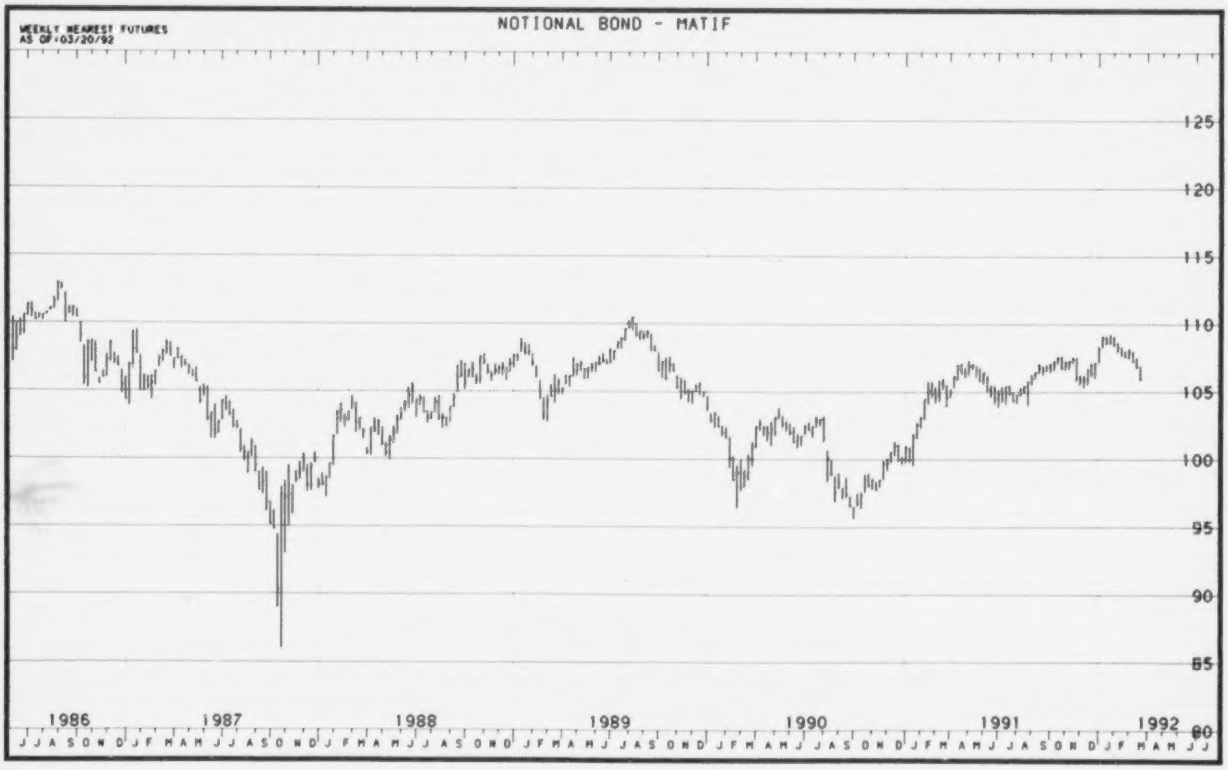
The London International Financial Futures Exchange (LIFFE) trades contracts on British government bonds, called Gilts, and German government bonds, called Bunds. Germany's first futures market, the Deutsche Terminborse (DTB) in Frankfurt began trading Bunds in 1990. Notional bond futures are traded on the Paris MATIF. Euroyen futures and yen government bond futures are traded in Tokyo. These are just some of the many active interest-rate futures contracts traded worldwide.

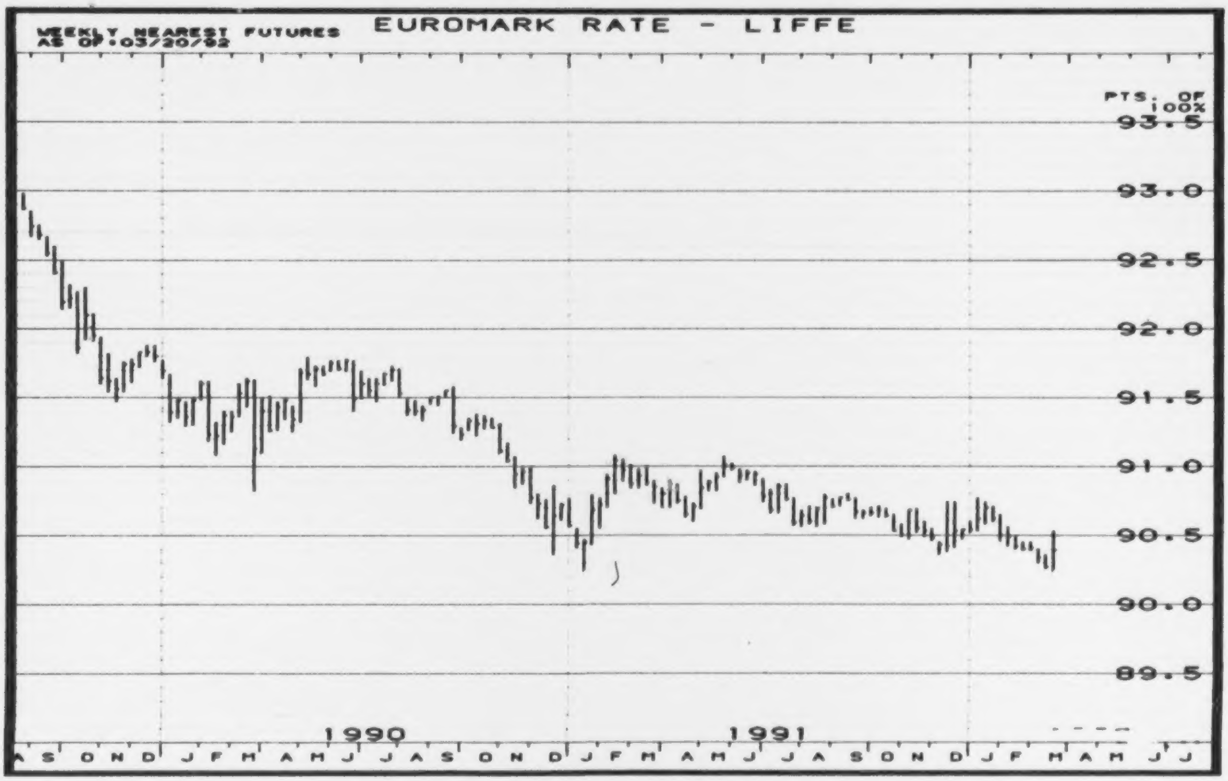

WEEKLY NEAREST FUTURES
AS OF:03/20/92
LONG GILT - LIFFE
PTS-32NDS OF 100%
108
104
100
96
92
88
84
80
76
72
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J

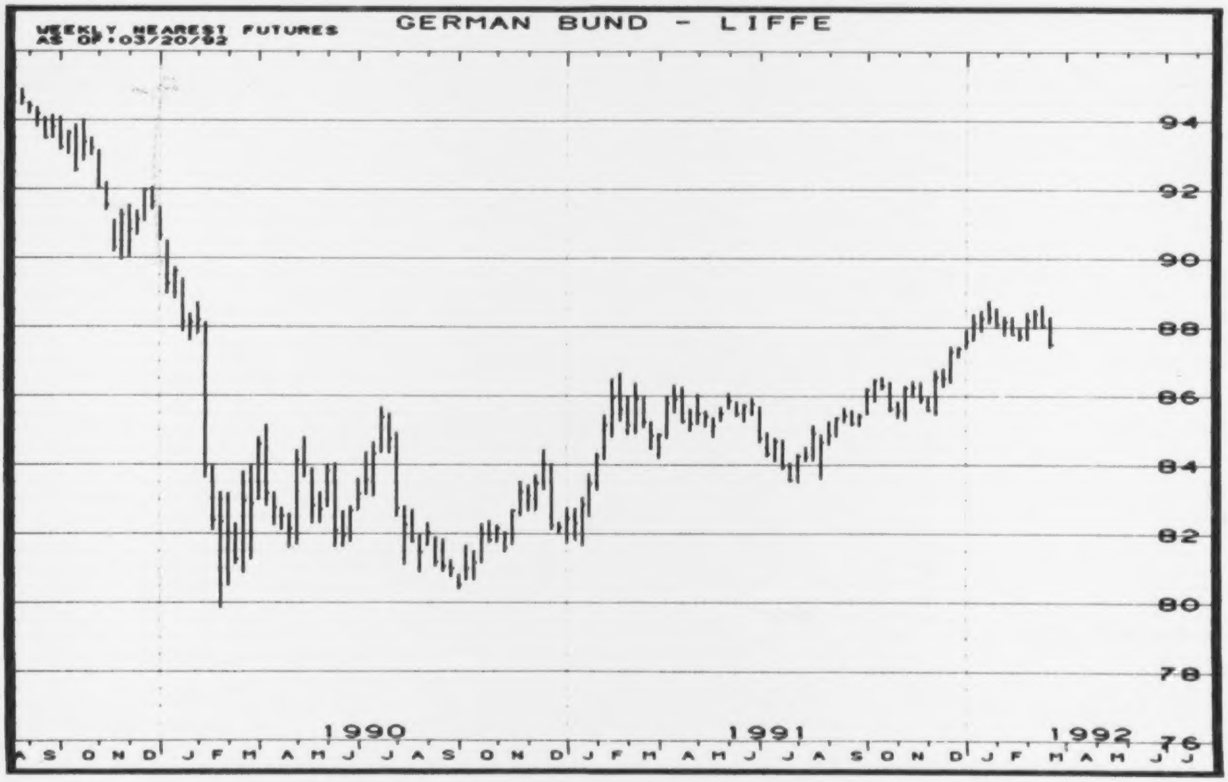

WEEKLY NEAREST FUTURES
AS OF:03/20/92
SHORT STERLING - LIFFE
PTS. OF 100%
92
91
90
89
88
87
86
85
84
83
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J

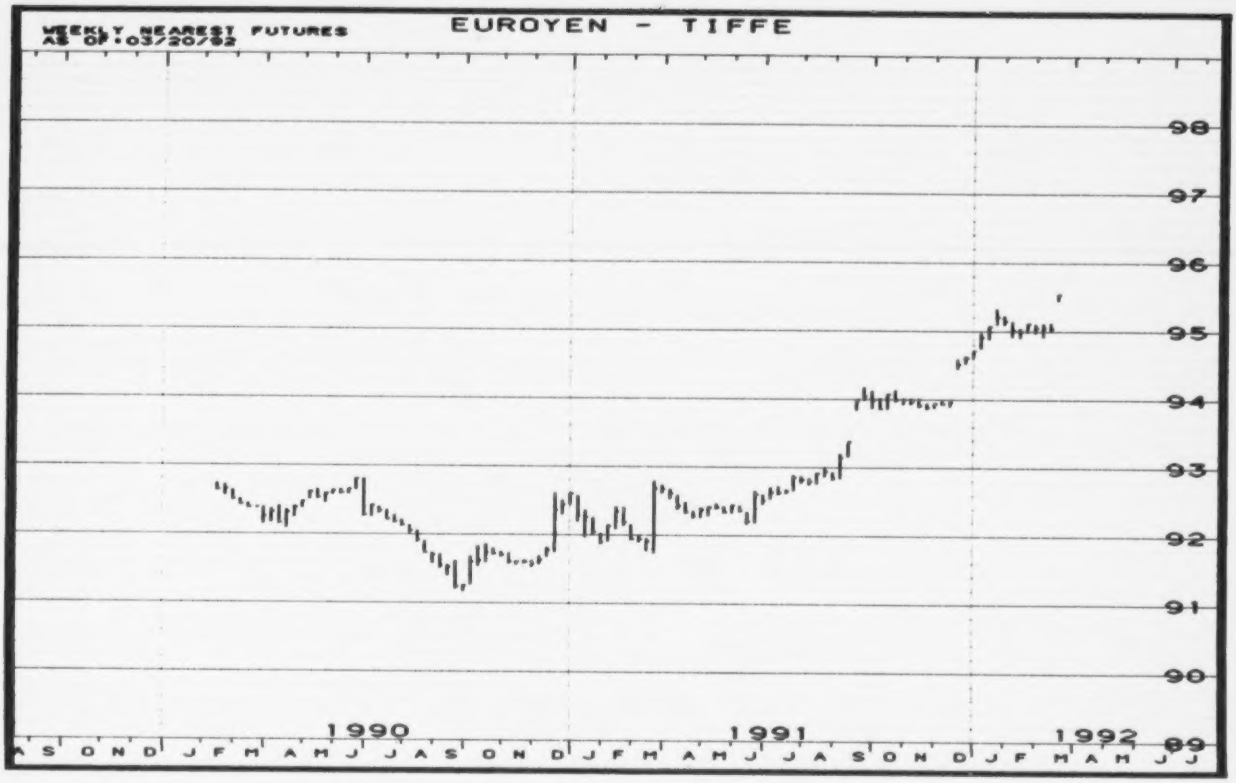
INTEREST RATES, WORLDWIDE

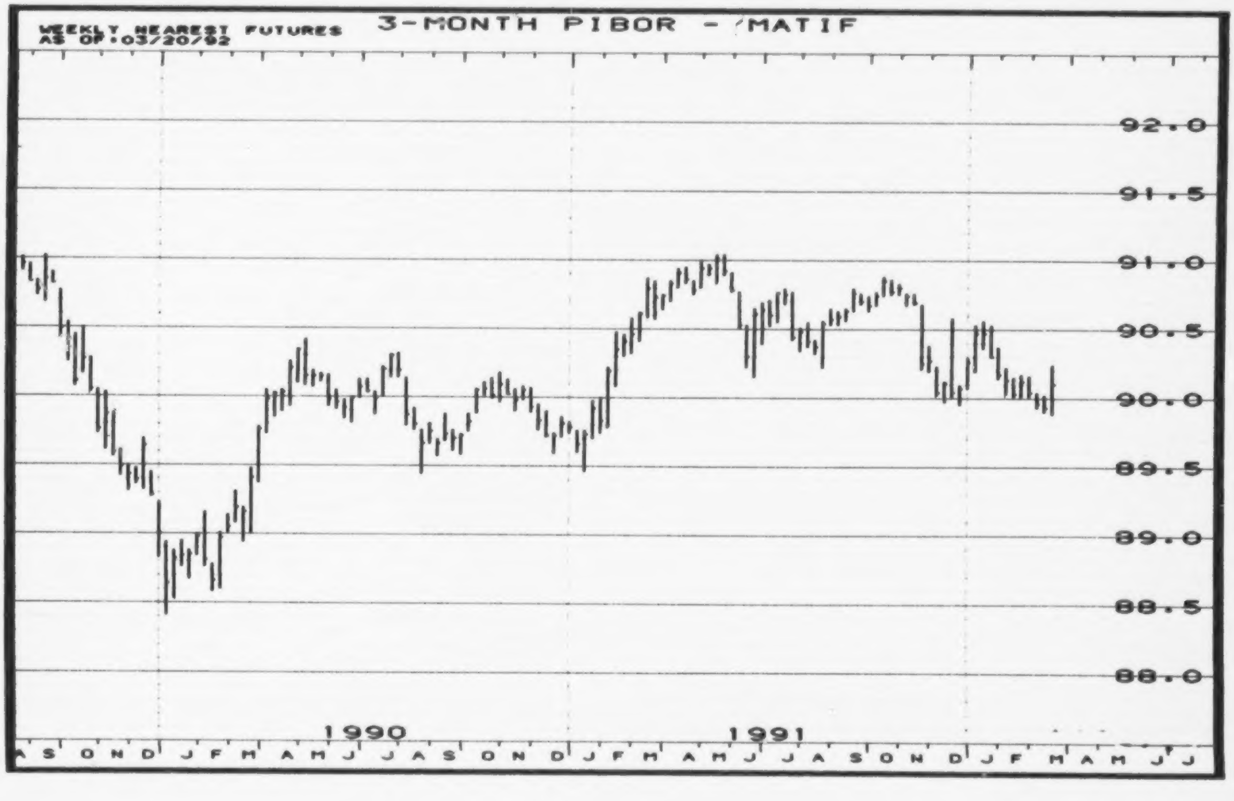





WEEKLY NEAREST FUTURES
AS OF:03/20/92
EUROMARK RATE - LIFFE
PTS. OF 100%
93.5
93.0
92.5
92.0
91.5
91.0
90.5
90.0
89.5
1990
1991
A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY NEAREST FUTURES
AS OF:03/20/92
GERMAN BUND - LIFFE
94
92
90
88
86
84
82
80
78
76
1990
1991
1992
A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY NEAREST FUTURES
AS OF:03/20/92
EUROYEN - TIFFE
98
97
96
95
94
93
92
91
90
89
1990
1991
1992
A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


WEEKLY NEAREST FUTURES
AS OF:03/20/92
3-MONTH PIBOR - MATIF
92.0
91.5
91.0
90.5
90.0
89.5
89.0
88.5
88.0
1990
1991
A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J

Japan—Economic Statistics Percentage Change from Previous Period

Year	Real GNP	Nominal GNP	Real Private Consumption	Real Public Consumption	Gross Fixed Investment	Real Total Domestic Demand	Real Exports of Goods & Services	Real Imports of Goods & Services	Consumer Prices[1]	Unempoloyment Rate
1983	2.8	4.2	3.4	3.0	-1.0	1.8	1.8	-5.8	2.0	2.7
1984	4.3	6.7	2.7	2.7	4.7	3.6	14.8	10.5	2.5	2.7
1985	5.2	6.8	3.4	1.7	5.3	4.1	6.4	-0.9	2.2	2.6
1986	2.6	4.4	3.4	4.5	4.8	3.7	-5.4	0.6	0.4	2.8
1987	4.3	4.4	4.2	0.4	9.6	5.1	4.6	10.5	0.2	2.9
1988	6.2	6.6	5.2	2.2	11.9	7.6	10.7	21.3	-0.1	2.5
1989	4.7	6.7	4.4	2.1	8.9	5.7	15.0	22.1	1.8	2.3
1990	5.6	7.6	4.0	1.4	10.9	5.8	10.9	11.9	2.4	2.1
1991	4.5	6.8	2.9	2.1	4.0	3.3	5.3	-1.6	2.7	2.2

[1] National accounts implicit private consumption deflator. Source: Organization for Economic Co-operation and Development

United Kingdom—Economic Statistics Percentage Change from Previous Period

Year	Real GDP	Nominal GDP	Real Private Consumption	Real Public Consumption	Real Gross Fixed Investments	Real Total Domestic Demand	Real Exports of Goods & Services	Real Imports of Goods & Services	Consumer Prices[1]	Unempoloyment Rate
1983	3.5	9.0	4.6	2.0	5.0	4.9	2.0	6.5	4.8	11.2
1984	2.1	6.8	1.6	0.9	8.5	2.5	6.6	9.9	5.0	11.4
1985	3.5	9.5	3.4	-0.1	4.0	2.7	5.6	2.3	5.4	11.6
1986	3.9	7.5	6.2	1.8	2.4	4.6	4.7	6.9	4.4	11.8
1987	4.8	10.0	5.2	1.2	9.6	5.3	5.6	7.8	4.3	10.4
1988	4.3	11.1	7.4	0.6	13.1	7.8	0.0	12.3	5.0	8.2
1989	2.3	9.3	3.5	0.9	6.8	3.3	4.2	7.4	5.5	6.2
1990	0.8	7.7	1.0	2.8	-2.4	-0.1	4.8	1.3	6.0	5.9
1991	-1.9	4.2	-0.7	2.8	-10.7	-3.2	1.3	-3.0	6.2	8.7

[1] National accounts implicit private consumption deflator. Source: Organization for Economic Co-operation and Development

France—Economic Statistics Percentage Change from Previous Period

Year	Real GDP	Nominal GDP	Real Private Consumption	Real Public Consumption	Real Gross Fixed Investment	Real Total Domestic Demand	Real Exports of Goods & Services	Real Imports of Goods & Services	Consumer Prices[1]	Unempoloyment Rate
1983	0.7	10.5	0.9	2.1	-3.6	-0.7	3.7	-2.7	9.7	8.4
1984	1.3	8.9	1.1	1.1	-2.6	0.4	7.0	2.7	7.7	9.8
1985	1.9	7.7	2.4	2.3	3.2	2.5	1.9	4.5	5.7	10.2
1986	2.5	7.9	3.9	1.7	4.5	4.5	-1.4	7.1	2.7	10.4
1987	2.3	5.3	2.9	2.8	4.8	3.3	3.1	7.7	3.2	10.5
1988	4.2	7.2	3.4	2.9	8.6	4.4	8.1	8.7	2.7	10.0
1989	3.9	7.2	3.2	0.2	7.5	3.5	10.3	8.2	3.4	9.4
1990	2.8	5.6	3.1	3.1	3.8	3.2	5.2	6.4	2.9	8.9
1991	1.4	4.2	1.5	2.5	-0.4	1.4	2.9	2.9	3.0	9.4

[1] National accounts implicit private consumption deflator. Source: Organization for Economic Co-operation and Development

Germany[2]—Economic Statistics Percentage Change from Previous Period

Year	Real GNP	Nominal GNP	Real Private Consumption	Real Public Consumption	Real Gross Fixed Investment	Real Total Domestic Demand	Real Exports of Goods & Services	Real Imports of Goods & Services	Consumer Prices[1]	Unempoloyment Rate
1983	1.9	5.4	1.3	0.2	3.3	2.3	-1.0	0.1	3.3	6.6
1984	3.1	5.2	1.6	2.5	0.3	1.9	8.6	5.1	2.8	7.1
1985	1.8	4.0	1.5	2.1	0.0	0.9	7.2	4.9	2.0	7.2
1986	2.6	5.5	3.4	2.5	3.6	3.3	0.1	3.4	-0.5	6.4
1987	1.5	3.5	3.3	1.5	2.1	2.6	0.9	4.2	0.6	6.2
1988	3.7	5.2	2.7	2.2	4.6	3.6	5.9	5.8	1.4	6.2
1989	3.8	6.5	1.7	-1.7	7.0	2.6	11.4	8.4	3.1	5.6
1990	4.5	8.0	4.7	2.1	8.8	5.0	9.9	11.9	2.6	5.1
1991	3.2	7.8	2.3	0.1	7.7	3.3	12.4	13.3	3.4	4.6

[1] National accounts implicit private consumption deflator. [2] Data are for Western Germany only, except for foreign trade statistics. Source: Organization for Economic Co-operation and Development.

Iron and Steel

For the U.S. steel industry, 1990's brighter skies were just the silver lining in a cloud of unprofitable years, and 1991 was one of the latter. Reduced demand from U.S. auto makers, and an inability to win price increases in supply contracts from the auto industry portended tough times ahead.

For the first nine months of 1991, U.S. producer shipments of steel mill products were 58.8 million tons, down 8 percent from 64.1 million tons in the comparable 1990 period. Of that, shipments of steel to the U.S. auto industry lost 15.6 percent. Shipments to the construction industry were off 11.4 percent and to service centers and distributors were down nearly 10 percent from the same period in 1990, according to the American Iron and Steel Institute.

In response to the decline in demand, prices slipped badly during the year. In September 1990, prices for No. 1 heavy melting steel were up to $110.81 a tonne. By September 1991, the price for the same quality of steel fell to $90.22 a tonne, with prospects for lower values looming on the horizon.

As an indication of how far the domestic steel industry had fallen, in September 1991 LTV Steel Co. halted operations at its McKinley Extension Mine near Aurora, Mn. The latest in a series of mine closures in recent years, LTV's move closed the book on mining in the Mesabi Range and the entire Lake Superior District. Once the largest iron ore producing region in the U.S., there is now no iron ore output in the entire region. At one time, 103 mines were operating, with shipments reaching their zenith of 89.4 million tons in 1944.

For the first six months of 1991, U.S. production of iron ore (exclusive of ore containing 5 percent or more manganese) totaled 27.53 million tonnes, compared with 1990's 28.78 million for the same period. For all of 1990, iron ore production totaled 55.46 million tonnes.

Iron ore shipments for the first six months of 1991 amounted to 25.1 million tonnes, compared with 1990's same-period 22.9 million. Shipments for all of 1990 totaled 55.2 million tonnes.

For the first five months of 1991, domestic consumption of iron ores and agglomerates was 24.9 million tonnes, against 1990's same-period use of 29.7 million tonnes. U.S.-produced ore accounted for the majority of iron ore consumed domestically, followed by Canadian ore.

The breakup of the Soviet Union and unsettled conditions in Eastern Europe painted a very uncertain consumption and production picture for Europe. Compounding the difficulties facing the Eastern European steel industry, experts estimated that steel consumption in the European Community totaled only 123 million tonnes in 1991, down from 1990's 128 million. EC steel production was expected to decline from 1990's 135 million tonnes to close to 130 million.

World Production of Raw Steel (Ingots & Castings) In Millions of Short Tons

Year	Belgium	Brazil	Canada	Czechoslovakia	China	France	Italy	Japan	Rep. of Korea	Poland	Spain	South Africa	United Kingdom	United States	USSR	Germany	World Total
1983	11.2	16.2	14.1	16.6	44.0	19.4	23.9	107.1	13.1	17.9	14.0	7.9	16.5	84.6	168.1	39.4	730.8
1984	12.5	20.3	16.2	16.3	47.8	21.0	26.5	116.4	14.4	18.2	14.9	8.6	16.7	92.5	170.0	43.4	784.0
1985	11.8	22.5	16.1	16.6	51.5	20.8	26.2	116.1	14.9	17.8	15.7	9.5	17.3	88.3	170.5	44.6	791.4
1986	10.7	23.4	15.5	16.7	57.4	19.4	25.2	108.3	16.0	18.9	13.2	9.7	16.3	81.6	177.0	40.9	784.0
1987	10.8	24.5	16.2	17.0	61.7	19.5	25.2	108.6	18.5	18.9	12.9	9.3	19.2	89.2	178.5	40.0	808.2
1988	12.3	27.0	16.7	16.5	65.0	20.9	26.1	116.5	21.1	18.7	13.2	9.5	21.0	99.9	179.5	45.2	857.0
1989[1]		27.6			67.5	21.3	27.8	118.9	24.1				20.6	97.9	176.5	45.2	863.1
1990[2]		22.7			72.8	21.0	28.0	121.6	25.5				19.7	98.9	169.8	48.6	851.0
1991[2]		23.0			76.0	21.5	28.5	124.0	27.0				19.0	86.0	155.0	48.0	840.0

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines* T.330

Average Wholesale Prices of Iron and Steel in the U.S. In Dollars Per Net Ton

	Pig Iron				No. 1 Heavy Melting Steel Scrap		Cents Per Pound at Pittsburgh								
									Steel Bars						
Year	Bessemer Neville Isl., Pa.	Iron Age Composite	No. 2 F.O.B. Birmingham	Steel Billets Pitts.	Pitts.	Chicago	Tin Plate (¼ Lb.)	Hot Rolled Sheet[2]	Hot Rolled	Cold Finished	Hot Rolled Strip	Carbon Steel Plates	Cold Rolled Strip	Galvanized Sheets	R.R. Steel[3] Scrap
1983	213.00	213.00		358.00	76.99	72.42	27.7–29.3	22.16	20.25	28.50	22.39	25.45	33.45	28.23	92.83
1984	213.00	213.00	27.3	368.00	92.71	83.12	29.0–30.7	23.60	22.08	29.87	23.60	24.50	35.30	30.15	110.27
1985	213.00	213.00	27.6	378.00	77.43	72.89	30.7–31.9	23.60	24.10	32.00	23.49	24.50	37.24	30.15	98.03
1986	—	213.00	24.8	378.00	74.87	73.49	31.9–31.9	21.15	24.10	32.00	23.30	18.27	37.24	27.89	94.07
1987		213.00	25.4	378.00	90.58	87.22	31.9–34.1	21.92	17.12	21.23	22.50	19.29	37.24	29.97	118.13
1988	-	N.A.	25.4	N.A.	113.78	113.47	34.1–36.7	21.50	17.25	21.23	22.10	21.64	37.24	31.05	150.25
1989					106.80	108.33		22.21	19.60	25.21	22.10	23.50	37.24	32.48	145.23
1990[1]					106.61	108.62		22.25	20.43	25.37	22.10	23.75	37.24	33.55	131.59
1991[1]					95.17	95.19									

[1] Preliminary. [2] 10 gauge. [3] Specialties scrap in $ *per gross ton*. *Source: American Metal Market* T.337

Salient Statistics of Steel in the United States In Millions of Short Tons

Year	Value of		Finished Steel Composite Price ¢ Lb.	Production							Shipments of Steel Products	
				Steel Ingots and Castings				Alloy Steel[2]				
	Exports (Million $)	Imports (Million $)		Basic Oxygen	Open Hearth	Electric[3]	Total	Stainless	Other	Total	Domestic Consumption	Export
1983	1,783	7,238	26.19	52.1	6.0	26.6	84.6	1.8	9.1	10.9	67.6	.5
1984	1,627	11,495	27.31	52.8	8.3	31.4	92.5	1.8	10.8	12.6	73.7	.4
1985	1,476	11,019	27.58	51.9	6.4	29.9	88.3	1.7	9.9	11.6	73.0	
1986	1,407	9,480	24.79	47.9	3.3	30.4	81.6	1.7	8.5	10.2	70.3	
1987	1,540	9,873	25.4	52.5	2.7	34.0	89.2	2.0	9.1	11.1	76.7	
1988[1]	2,556	10,800	25.4	58.0	5.1	36.8	99.9	2.2	10.8	13.0	84.0	
1989[4]			25.2	59.6	4.5	35.9	97.9	2.0	9.0	11.0	84.1	
1990				58.5	3.5	38.0					84.2	

[1] Preliminary. [2] Included under total steel production. [3] Includes crucible steels. [4] Estimate.
Sources: American Iron & Steel Institute; U.S. Bureau of Mines T.331

U.S. Production of Steel Ingots, Rate of Capability Utilization[1] In Percent

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	43.4	49.0	55.5	58.9	57.9	56.5	54.3	55.1	57.8	60.2	58.7	54.7	55.4
1984	69.6	76.0	79.1	80.8	79.8	71.4	65.3	60.5	57.7	58.4	57.8	52.4	68.4
1985	60.9	66.1	72.1	71.6	68.9	66.3	62.1	63.2	63.4	65.2	64.7	59.7	66.1
1986	69.4	71.8	71.9	73.5	69.5	63.5	59.2	52.8	54.3	56.8	56.5	54.9	63.8
1987	65.5	69.5	77.3	80.3	80.2	79.7	77.3	79.1	83.9	84.4	85.2	82.8	79.5
1988	88.1	89.7	92.2	91.4	93.1	87.4	88.0	86.6	90.1	87.7	85.8	83.8	89.2
1989[2]	88.2	89.8	90.9	92.2	88.1	86.2	80.8	79.2	80.0	83.0	77.4	73.3	84.5
1990[2]	83.1	85.1	85.7	85.2	85.7	84.5	82.0	85.5	84.6	85.1	83.8	75.0	84.0
1991[2]	74.6	73.1	71.7	72.5	70.0	71.7	74.8	75.2	78.5	78.0			

[1] Based on tonnage capability to produce raw steel for a full order book. [2] Preliminary. *Source: American Iron and Steel Institute* T.332

United States Production of Steel Ingots In Thousands of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	5,570	5,676	7,127	7,292	7,412	6,993	6,921	7,020	7,134	7,692	7,263	6,991	83,379
1984	7,970	8,142	9,056	8,997	9,174	7,945	7,460	6,915	6,378	6,703	6,422	6,013	92,528
1985	6,984	6,851	8,269	7,872	7,830	7,292	7,010	7,130	6,924	7,351	7,051	6,728	88,259
1986	7,666	7,171	7,947	7,787	7,616	6,730	6,352	5,668	5,644	6,087	5,860	5,877	81,606
1987	6,248	5,992	7,375	7,402	7,641	7,349	7,324	7,494	7,694	8,073	7,882	7,916	89,151
1988	8,380	7,984	8,763	8,398	8,832	8,031	8,313	8,181	8,237	8,332	7,883	7,954	99,924
1989[1]	8,729	8,022	8,997	8,738	8,633	8,171	7,955	7,790	7,617	8,175	7,386	7,222	97,943
1990[1]	8,241	7,624	8,505	8,209	8,529	8,142	8,101	8,452	8,094	8,424	8,021	7,422	98,015
1991[1]	7,577	6,705	7,283	7,089	7,076	7,017	7,338	7,386	7,457	7,711			

[1] Preliminary. *Source: American Iron and Steel Institute* T.333

Shipments of Steel Products[1] by Market Classifications in the United States In Thousands of Net Tons

Year	Appliances, Utensils & Cutlery	Automotive	Containers, Packaging & Shipping Materials	Construction Includ. Maint.	Contractors Products	Electrical Equipment	Export	Machinery, Industrial Equip. & Tools	Oil and Gas	Rail Transportation	Steel for Converting & Processing[2]	Steel Service Center & Distributors	All Other[3]	Total Shipments
1983	1,618	12,320	4,532	7,271	2,703	2,335	544	2,486	1,296	937	1,211	16,710	13,621	67,584
1984	1,635	12,554	4,337	8,614	2,563	2,363	428	2,737	1,727	1,036	4,686	17,234	13,098	73,012
1985	1,182	12,725	4,069	6,407	2,663	1,845	494	2,129	1,745	1,059	4,971	17,548	15,861	72,698
1986	1,648	11,889	4,113	7,336	3,278	2,113	495	2,076	1,023	798	5,635	17,478	12,381	70,263
1987	1,633	11,343	4,372	7,681	3,337	2,373	515	2,277	1,489	758	7,195	19,840	13,844	76,654
1988	1,631	12,078	4,423	6,014	2,815	2,465	1,233	2,537	1,234	1,116	6,410	18,980	23,038	83,974
1989	1,710	11,225	4,465	6,814	2,898	2,484	3,183	2,158	864	1,116	6,177	18,382	22,783	84,259
1990	1,057	10,410	4,481	7,201	2,773	2,375	2,487	2,096	1,375	919	6,900	18,308		84,736

[1] All grades including carbon, alloy & stainless steel. [2] Net total after deducting shipments to reporting companies for conversion or resale. [3] Includes agricultural; bolts, nuts, rivets & screws; forgings (other than automotive); shipbuilding & marine equipment; aircraft; mining, quarrying & lumbering; other domestic & commercial equipment machinery; ordnance & other direct military; & shipments of non-reporting companies. *Source: American Iron and Steel Institute* T.334

Net Shipments of Steel Products in the United States

(All Grades, Including Carbon, Alloy & Stainless Steel) In Thousands of Net Tons

Year	Cold Finished Bars	Rails & Accessories	Wire Drawn &/or Rolled	Tin Mill Products	Plates (cut & coils)	Sheets & Strip Galv. (Hot Dipped)	Hot Rolled Bars	Pipe & Tubing	Struct. Shapes & Steel Piling	Reinforcing Bars	Hot Rolled Sheets	Cold Rolled Sheets	Semi-Finished	Alloy	Stainless
1987	1,361	515	1,105	3,988	4,048			3,570	5,120	4,918	13,048	13,859	5,456	7,275	1,623
1988	1,499	615	1,073	4,069	7,328	8,115	6,460	4,443	5,209	5,091	12,589	13,871	5,976	4,552	1,586
1989	1,472	562	1,002	4,126	7,384	8,543	7,617	4,011	5,355	5,015	12,898	13,854	6,236	4,143	1,472
1990	1,486	519	918	4,032	7,945	7,883	7,878	4,652	6,093	5,305	13,388	13,199	6,313	4,636	1,515
1991	1,328	461	862	4,039	6,917	6,909	6,968	4,491	5,714	4,812	12,924	11,387	6,840	3,917	1,449

Source: American Iron & Steel Institute T.335

U.S. Foreign Trade of Iron & Steel Products In Thousands of Short Tons

	U.S. Imports of Iron & Steel Pdts.						Exports of Iron & Steel Pdts. from U.S.					
				Grand Total						Grand Total		
Year	Steel Mill Pdts.	Other Steel Pdts.	Iron Pdts. & Ferro-alloys	Quantity	Mil. $	Iron & Steel Scrap	Steel Mill Pdts.	Other Steel Pdts.	Iron Pdts. & Ferro-alloys	Quantity	Mil. $	Iron & Steel Scrap
1985	24,278	1,211	218	25,707	11,019	611	930	200	136	1,266	1,476	9,950
1986	20,677	1,257	210	22,145	9,480	724	927	168	106	1,201	1,407	11,704
1987	20,351	1,020	163	21,534	9,873	843	1,094	226	99	1,419	1,540	10,367
1988[1]	20,775	1,220	316	22,310	10,800	1,038	2,066	381	129	2,576	2,556	10,098

[1] Preliminary. *Source: U.S. Bureau of Mines; American Metal Market* T.336

World Production of Pig Iron (Excludes Ferro-Alloys) In Millions of Short Tons

Year	Australia	Belgium	Brazil	Canada	China	Czech.	France	Germany	India	Italy	Japan	Romania	Poland	Un. Kingdom	USSR	United States	World Total
1986	6.5	8.9	22.4	10.2	55.3	10.6	15.4	32.0	11.6	13.1	82.3	10.3	11.6	10.7	124.8	44.3	553.1
1987	6.1	9.1	23.7	10.5	59.4	10.8	16.3	31.4	12.0	11.5	80.9	9.6	11.5	13.2	124.9	48.3	566.5
1988[1]	6.3	10.0	26.0	10.5	62.2	10.8	14.8	35.8	11.0	12.6	87.4	9.4	11.6	14.3	125.0	55.7	593.9
1989[2]			26.9		57.0		16.6	33.6		13.0	88.2			13.9	123.6	55.9	599.7
1990[2]			23.3		68.1		16.5	35.3		12.7	88.4			13.6	121.3	54.8	593.7
1991[2]			19.5		71.0		16.0	37.0		12.5	90.0			13.0	107.0	48.0	585.0

[1] Preliminary. [2] Estimated. *Source: Bureau of Mines* T.338

U.S. Pig Iron Production (Excluding Production of Ferro-Alloys) In Thousands of Short Tons

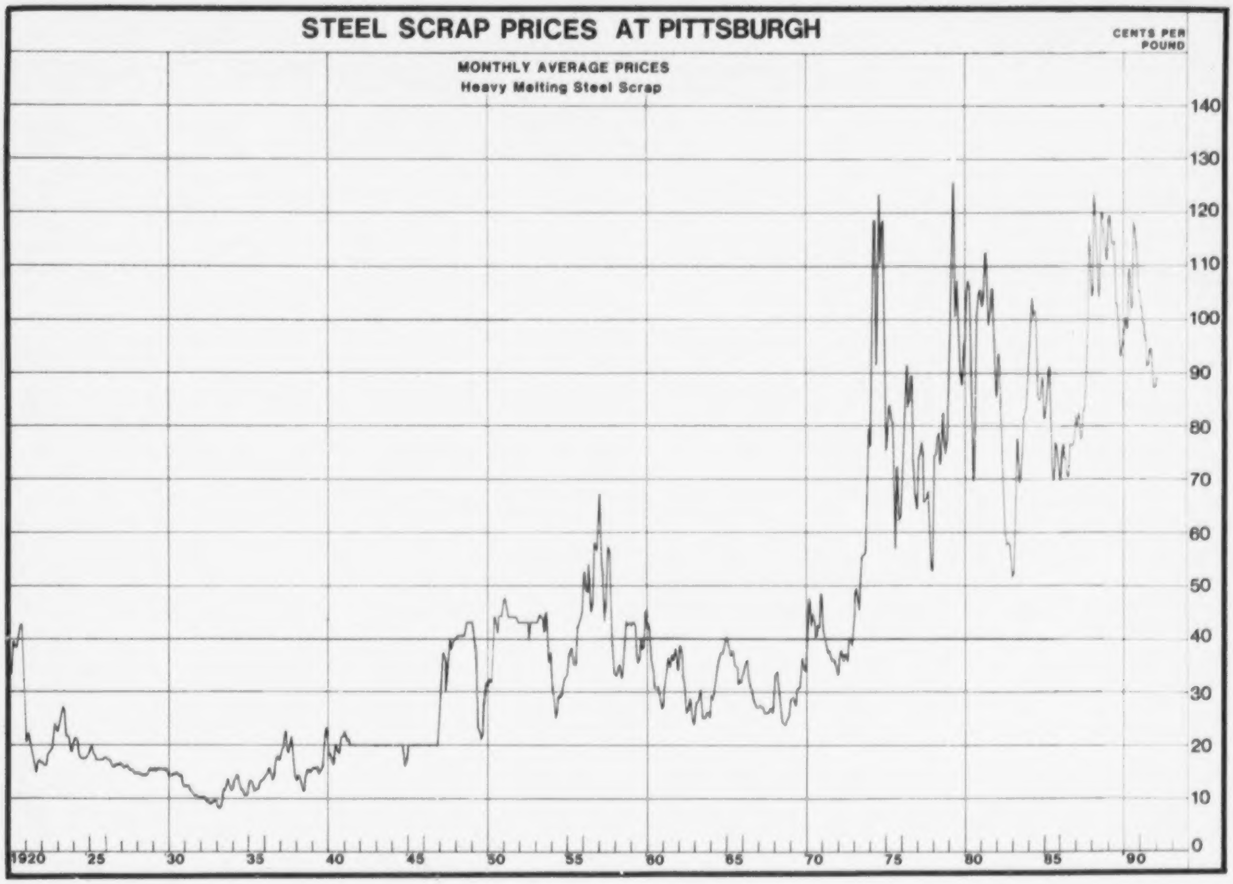
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1986	4,297	4,002	4,341	4,341	4,284	3,697	3,526	2,966	2,982	3,161	3,097	3,146	43,952
1987	3,214	3,069	3,891	4,048	4,256	4,079	4,235	4,165	4,208	4,407	4,351	4,447	48,137
1988	4,683	4,443	4,842	4,699	4,932	4,497	4,762	4,584	4,612	4,646	4,455	4,712	55,745
1989[1]	4,964	4,654	5,112	4,990	4,917	4,707	4,604	4,172	4,403	4,692	4,322	4,202	55,873
1990[1]	4,638	4,221	4,681	4,549	4,746	4,530	4,656	4,788	4,629	4,673	4,523	4,264	54,925
1991[1]	4,077	3,470	4,047	3,830	3,885	3,830	4,179	4,121	4,175	4,251			

[1] Preliminary. *Source: American Iron and Steel Institute* T.341

Salient Statistics of Ferrous Scrap & Pig Iron in the U.S. In Millions of Short Tons

	Consumption: Ferrous Scrap & Pig Iron Charged To												Stocks—Dec. 31 Ferrous Scrap & Pig Iron at Consumers'		
	Mfg. of Pig Iron & Steel Ingots & Castings			Iron Foundries & Misc. Users				All Uses							
Year	Scrap	Pig Iron	Total	Scrap	Pig Iron	Total	Mfg. of Steel Castings (Scrap)	Ferr. Scrap	Pig Iron	Grand Total	Imports of Scrap[2]	Exports of Scrap[3]	Scrap	Pig Iron	Total Stocks
1985	53.2	49.8	103.0	15.2	1.5	16.7	2.1	70.5	51.4	121.9	.6	10.0	5.1	.3	5.4
1986	49.7	44.3	94.0	14.4	1.2	15.6	1.8	65.9	45.6	111.5	.7	12.0	4.3	.2	4.5
1987	51.7	48.3	100.7	14.7	1.1	15.8	1.9	68.3	50.0	118.3	.8	10.7	4.8	.3	5.1
1988	56.3	55.7	112.0	18.2	1.5	19.7	2.3	76.8	59.0	135.8	1.0	10.5	4.6	.2	4.8
1989	51.7	55.9	107.6	17.4	1.5	18.9	3.1	72.2	58.4	130.6	1.2	12.5	4.6	.3	4.9
1990[1]	57.5	55.5	113.0					70.2	55.1	125.3	1.6	12.8	4.6	.2	4.5
1991[4]											1.4	10.8	4.6		

[1] Preliminary. [2] Including tinplate scrap. [3] Excluding tinplate circles, strips, cobbles, etc. [4] Estimate. *Source: Bureau of Mines* T.342



STEEL SCRAP PRICES AT PITTSBURGH

MONTHLY AVERAGE PRICES
Heavy Melting Steel Scrap

Consumption of Pig Iron in the U.S., by Type of Furnace or Equipment In Thousands of Net Tons

Year	Open Hearth	Electric	Cupola	Basic Oxy. Consen.	Air & Other Furn.	Direct Casting	Total	Year	Open Hearth	Electric	Cupola	Basic Oxy. Conver.	Air & Other Furn.	Direct Castings	Total
1981	8,867	583	685	62,162	254	2,489	75,040	1986	2,325	313	428	41,582	58	899	45,604
1982	3,635	496	481	38,553	141	1,102	44,409	1987	2,057	1,880	370	47,525	56	982	50,030
1983	3,918	341	425	44,330	91	965	50,070	1988[1]	3,858	748	1,399	52,027	44	969	59,047
1984	5,718	368	469	45,551	92	1,002	53,202	1989[2]	1,744	1,159	429	54,431	33	591	58,387
1985	4,737	503	501	44,515	56	1,100	51,411	1990		1,402	216	37,774	20	184	39,596

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines* T.340

Wholesale Price of No. 1 Heavy Melting Steel Scrap at Chicago In Dollars Per Gross Ton

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	83.00	78.63	69.78	63.86	58.30	51.77	49.00	51.73	48.95	47.86	45.00	45.48	57.78
1983	56.14	67.00	77.70	70.33	65.00	70.52	70.08	74.00	78.00	78.00	78.30	84.00	72.42
1984	88.29	89.00	87.09	85.14	85.00	84.71	79.00	78.00	81.00	81.09	83.00	76.00	83.12
1985	78.86	82.16	84.76	79.59	68.00	62.00	64.24	73.00	72.00	71.87	69.00	69.19	72.89
1986	74.23	76.89	74.05	74.00	74.00	71.00	71.00	76.71	73.14	70.87	73.00	73.00	73.49
1987	78.00	78.00	73.00	72.00	74.15	77.00	78.73	84.00	96.52	116.00	115.47	103.73	87.22
1988	100.80	119.43	119.02	117.24	111.38	108.55	120.00	119.78	115.00	115.00	109.16	106.33	113.47
1989	114.10	118.32	113.00	113.00	113.00	113.00	108.00	108.00	108.00	101.09	96.00	94.50	108.33
1990	104.00	102.29	98.00	109.43	114.55	111.67	108.50	116.00	113.76	112.50	107.73	105.00	108.62
1991	104.76	100.74	98.00	97.80	93.18	87.50	87.74	94.14	98.50	97.50	91.97	90.50	95.19
1992													

Source: American Metal Market T.339

World Production of Iron Ore[3], by Specified Countries (Gross Weight) In Millions of Metric Tons[4]

Year	Australia	South Africa	Brazil	Canada	Chile	China	France	Mauritania	India	Liberia	Spain	Sweden	Peru	United States	USSR[1]	Venezuela	World Total[1]
1982	86.3	24.2	91.7	35.0	6.4	68.0	19.1	8.1	40.3	17.9	8.2	15.9	5.7	35.4	240.6	11.0	768.6
1983	69.6	16.3	87.3	32.7	5.7	70.0	15.7	7.3	38.2	14.7	7.3	14.0	4.2	37.6	241.3	9.6	728.2
1984[4]	89.0	24.6	112.1	39.9	6.7	75.0	14.8	9.5	41.0	15.1	7.3	18.1	4.0	52.1	247.1	13.1	829.3
1985	97.4	24.4	128.3	39.5	6.5	80.0	14.4	9.3	42.5	15.3	6.5	20.5	4.9	49.5	247.6	16.2	862.2
1986	94.0	24.5	132.3	36.2	7.0	90.0	12.4	8.9	47.8	15.3	6.1	20.5	5.2	39.5	250.0	19.1	868.4
1987	101.7	22.0	134.1	37.7	6.6	100.0	10.9	9.0	51.0	13.7	4.7	19.6	5.2	47.6	250.9	17.8	890.1
1988	96.1	25.2	145.0	38.7	7.9	105.0	10.7	10.0	52.3	12.8	4.2	20.4	4.2	57.5	251.0	18.8	916.4
1989	105.8	30.0	153.7	40.9		100.0	10.5	11.1	49.5	11.7		21.6		59.0	241.0	18.1	923.6
1990[1]	112.0	33.0	162.0	34.0		105.0	9.9	12.0	50.0	5.1		23.0		53.9	239.0	19.0	928.9
1991[2]	109.0	30.0	158.0	30.0		100.9	8.7	10.9	52.5	6.7		25.0		55.8	245.5	17.8	850.8

[1] Estimate. [2] Preliminary. [3] Iron ore, iron ore concentrates and iron ore agglomerates. [4] Data prior to 1984 are in millions of long tons. *Source: Bureau of Mines*

T.344

Salient Statistics of Iron Ore[2] in the U.S. In Millions of Metric Tons[8]

Year	Net Import Reliance % of Apparent Consumption	Production[3] Total[3]	Production Lake Superior	Production North east	Production South-east	Production West	Shipments[4]	Value Mill. $ (at Mine)	Avg. Value $ at Mine Per Ton	Stocks—Dec. 31 Mines	Stocks—Dec. 31 Consuming Plants	Stocks—Dec. 31 Lake Erie Docks	Imports	Exports	Consumption	Manganiferous Shipments[5]
1982	34	35.4	31.8		3.6		35.8	1,491.8	41.72	12.1	29.9	5.8	14.5	3.2	63.9	—
1983	37	37.6	35.6		2.0		44.6	1,945.0	43.61	4.1[6]	25.5	3.2	13.2	3.8	70.6	—
1984[8]	19	52.1	50.5		1.6		51.7	2,247.7	43.48	5.3	24.4	3.0	17.5	5.1	73.7	.1
1985	21	49.5	48.1		1.4		50.2	2,076.7	41.37	6.0	21.6	2.4	16.0	5.1	71.7	—
1986	33	39.5	38.2		1.3		42.0	1,472.5	35.07	3.3	17.4	2.0	17.0	4.6	62.1	—
1987	22	47.6	46.8		.8		48.0	1,503.1	31.33	2.4	16.6	2.1	16.8	5.1	67.8	N.A.
1988	18	57.5	56.0		1.5		57.1	1,716.7	30.06	3.0	18.0	2.5	20.2	5.3	83.7	N.A.
1989	22	59.0	57.0		2.0		58.3				21.7		19.6	5.4	80.4	
1990[1]	26	56.4	54.6				68.5				14.8		15.7	3.5	79.8	
1991[7]			42.2				53.3									

[1] Preliminary. [2] Usable; less than 5% Mn. [3] Includes by-product ore. [4] Excludes by-product ore. [5] Iron ore; 5 to 35% Mn. [6] New classification. [7] Estimate. [8] Data prior to 1984 are in millions of long tons. *Source: Bureau of Mines*

T.345

U.S. Imports (for Consumption) of Iron Ore from Principal Countries In Thousands of Metric Tons[3]

Year	Philippines	Venezuela	Australia	Brazil	Canada	Chile	South Africa	Mauritania	Liberia	Sweden	Peru	Norway	Total
1982	—	1,643	—	972	9,281	47	52	—	2,399	71	35	—	14,501
1983	—	1,333	—	1,276	8,832	—	—	—	1,732	68	—	—	13,246
1984	—	1,524	—	2,533	11,190	—	—	—	1,745	84	7	—	17,187
1985	—	2,068	—	2,540	8,557	164	—	—	2,206	65	121	—	15,771
1986[3]	56	2,346	10	3,752	8,836	94	—	66	1,511	106	92	—	17,011
1987	59	2,622	194	3,698	7,981	636	—	412	994	139	84	—	16,849
1988	239	3,568	1,076	4,935	9,157	139	—	522	128	88	181	—	20,183
1989[1]	70	3,700	400	4,500	6,900	100		550	250		150		19,600
1990[2]													

[1] Preliminary. [2] Estimate. [3] Data prior to 1986 are in thousands of long tons. *Source: Department of Commerce*

T.346

Total[1] Iron Ore Stocks at End of Month in the U.S. In Millions of Metric Tons[3]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	60.4	60.9	57.3	57.7	57.6	58.5	59.1	57.8	55.8	54.5	52.6	52.6
1983	45.5	42.6	39.6	37.5	37.2	37.4	37.0	35.3	35.7	34.7	33.8	32.6
1984	30.1	28.4	26.3	26.2	27.4	29.2	30.9	31.6	32.2	33.3	33.7	32.1
1985[3]	30.9	29.4	28.5	28.4	29.5	30.3	30.4	31.2	31.7	31.1	30.4	29.9
1986	27.7	26.6	25.5	24.4	25.4	25.5	25.3	23.8	24.1	24.0	23.1	22.5
1987	22.2	22.1	21.2	20.2	19.5	19.6	19.9	19.7	20.0	20.6	20.9	21.3
1988	21.7	21.6	20.7	20.8	20.4	20.0	20.5	21.5	22.9	22.9	23.2	23.5
1989	23.2	23.3	22.7	21.1	21.7	21.5	22.3	22.3	22.6	21.4	22.5	22.5
1990[2]	22.1	22.0	21.0	20.6	20.5	21.0	21.9	22.1	22.3	22.0	22.0	23.0
1991[2]	22.6	22.2	21.3	20.8	21.8	23.2						

[1] All stocks at mines, furnace yards and at U.S. docks. [2] Preliminary. [3] Prior to 1985 data is in millions of long tons. [2,240 lbs. = 1 long ton] *Source: American Iron Ore Association*

T.347

Lard

U.S. lard production was 915 million pounds in the 1990/91 season and was forecast to rise to 950 million in 1991/92, because of an expected 8 percent increase in hog slaughter.

Major uses of lard for food include baking and frying fats and margarine. Domestic use was expected to rise to 835 million pounds in 1991/92 from 807 million the previous season, despite an overall trend towards lower domestic use of lard as food producers shift away from animal fats.

Although lard prices rose worldwide in 1991, lard continued to be an inexpensive source of fat in the U.S. For the year, lard prices in Chicago averaged 13.3 cents a pound, about the same as in 1990.

Mexico was again the leading export market for U.S. lard in 1991. Total U.S. exports recovered to about 107 million pounds in 1990/91, above initial expectations. Exports were expected to be virtually unchanged during the 1991/92 season.

Worldwide, lard production dropped in 1991, partly due to lower output in the former Soviet Union. Total 1991 world supplies were estimated at 5.78 million tonnes, down about 75,000 tonnes from the 1990 level. Disappearance of lard was expected to fall by about 1 percent worldwide, with the EC and former Eastern Bloc countries showing declines in usage.

Supply and Distribution of Lard in the United States In Millions of Pounds

	Supply							Distribution							
	Production								Total Disappearance	Domestic Disappearance					
	Commercial												Direct Use as Lard		
Year	Federally Inspected	Other	Total	Farm	Total Production	Stocks Jan. 1[2]	Total Supply	Exports		Domestic Disappearance	Shortening	Margarine	Civilian	Military	Per Capita Lbs.
1984	911	18	929	7	936	34	973	89	935	846	263	40	491	1	2.1
1985	906	17	923	6	929	39	966	105	931	826	289	62	426	1	1.8
1986	855	14	869	5	874	35	911	104	889	785	274		417	1	1.7
1987	844	13	857	5	862	22	885	107	852	745	224		441	1	1.8
1988	919	14	933	5	938	33	965	127	928	801	265		433	1	1.7
1989	464	—	464	2	466	37	972	110	940	830	295		442	1	1.8
1990[1]						32	842	63	917	854	264		540		2.2

[1] Preliminary. [2] Factory & warehouse. *Source: Economic Research Service, U.S.D.A.* T.348

Lard Exports[2] of the United States by Selected Country of Destination In Thousands of Metric Tons

Year	Asia	Belgium & Lux.	Canada	Belize	Bolivia	Neth. Antilles	Colombia	Germany	Haiti	Mexico	Ecuador	Netherlands	Poland	United Kingdom	Yugoslavia	Total
1983	5.4	1.0	7.3	1.5	—	.4	.1	—	1.5	19.7	—	—	—	.4	—	40.2
1984	.1	0	9.1	1.4	.1	.3	.1	—	.1	28.6	—	—	0	—	—	40.4
1985	—	0	5.6	.9	.1	.1	.1	—	3.5	35.6	—	—	—	—	—	47.4
1986	.5	.3	2.4	1.3	0	.1	.4	—	2.0	41.6	—	—	—	0	—	47.8
1987	.4	.3	2.5	.9	0	.5	.4	—	.6	43.0	—	—	—	0	—	48.2
1988	1.0	0	4.5	1.7	0	.9	.5	—	.7	49.4	—	—		.4	—	57.6
1989[1]	4.4	0	5.9	1.0	0	1.3	.4	—	1.7	36.3	—	—		.1	—	50.1

[1] Preliminary. [2] Excludes exports for civilian relief & shipments by CARE. *Source: Foreign Agricultural Service, U.S.D.A.* T.352

United States Commercial[1] Production of Lard In Millions of Pounds

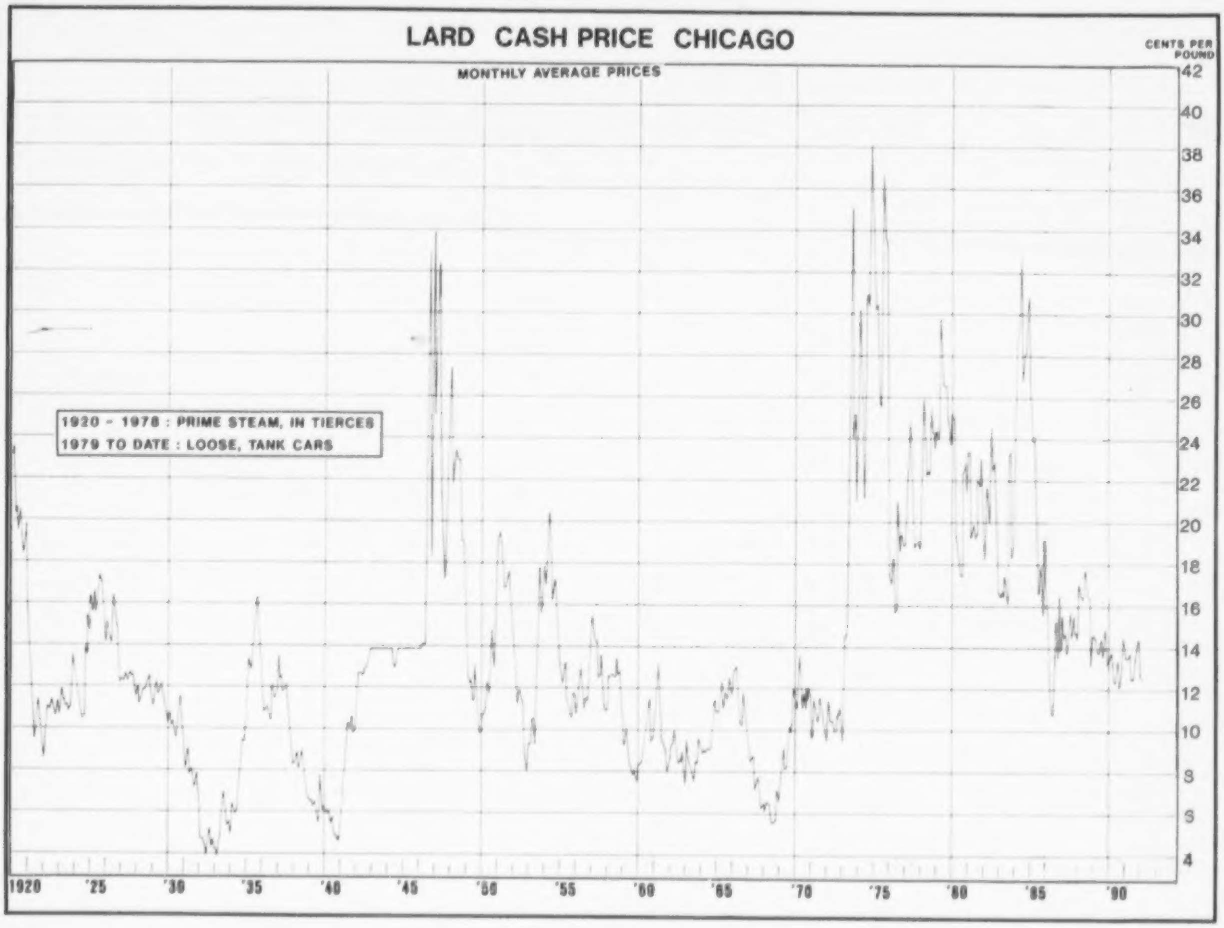
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	81.0	70.0	78.0	81.0	83.0	70.0	72.0	77.0	76.0	85.0	78.0	76.0	927
1986	80.0	68.0	76.0	81.0	76.0	67.0	67.0	66.0	71.0	80.0	69.0	75.0	876
1987	76.0	66.0	74.0	73.0	66.0	67.0	68.0	68.0	71.0	78.0	78.0	78.0	863
1988	73.0	73.0	83.0	76.0	74.0	74.0	69.0	79.0	81.0	84.0	84.0	82.0	932
1989[2]	77.0	71.0	82.0	78.0	80.0	73.0	N.A.	N.A.	N.A.	N.A.			

[1] Includes "Rendered Pork Fat." [2] Preliminary. *Source: Department of Agriculture* T.354

Consumption (edible & inedible) of Lard in the United States In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	34.1	29.6	30.0	30.1	31.2	29.3	27.9	30.8	36.4	44.5	43.0	33.4	400.3
1986	33.3	31.4	35.6	38.1	35.6	33.8	26.3	23.3	27.5	28.4	28.9	25.6	367.8
1987	20.2	22.1	25.9	21.3	18.5	28.0	26.8	22.3	33.0	27.4	26.3	32.4	304.2
1988	25.6	27.7	31.1	29.3	28.5	27.4	25.9	28.0	37.9	34.6	36.3	35.3	367.6
1989	28.9	27.5	34.0	31.1	33.5	32.2	28.9	33.5	34.1	39.0	42.5	32.7	397.9
1990[1]	27.0	27.3	30.9	26.3	32.1	29.2	22.8	32.0	31.3	34.6	33.8	30.6	384.9
1991[1]	97.2			94.8			97.8						

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.349



Average Wholesale Price of Lard—Loose, Tank Cars, Chicago In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	24.6	24.0	24.1	22.7	20.0	18.1	16.9	17.8	15.8	15.4	19.2	16.5	19.6
1986	16.0	15.5	12.3	11.3	10.6	11.3	14.9	15.2	13.6	16.5	13.9	14.2	13.7
1987	15.5	14.4	14.6	13.7	14.7	14.9	15.7	14.5	15.5	14.7	14.7	14.4	14.8
1988	17.0	16.7	16.6	16.4	16.3	17.6	17.7	16.5	16.4	16.3	13.2	14.6	16.3
1989	14.5	14.4	14.1	13.8	13.7	14.1	14.4	13.5	14.2	14.6	14.8	13.2	14.1
1990	13.5	13.8	13.2	12.5	12.3	13.2	13.4	12.1	12.7	14.0	14.5	14.1	13.3
1991	13.5	13.5	13.5	13.6	12.5	12.5	12.4	13.4	13.9	14.4	13.7	12.7	13.3
1992	12.5												

Source: Economic Research Service, U.S.D.A.; Wall St. Journal; CRB. T.350

United States Cold Storage Holdings of all Lard[1], on First of Month In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	38.7	33.7	36.6	37.1	42.0	43.1	47.3	42.2	41.0	41.3	39.3	35.9
1986	35.4	37.6	36.4	40.8	39.8	35.5	27.3	32.1	28.3	21.6	30.6	28.9
1987	21.9	31.5	30.9	27.2	28.9	29.9	27.4	27.8	28.9	28.8	38.2	36.2
1988	33.0	37.2	33.8	37.1	31.2	31.9	37.8	41.1	30.1	39.0	41.7	36.7
1989[2]	37.4	38.2	37.1	27.3	34.2	37.6	41.3	32.4	28.9	41.6	29.0	36.6
1990	32.0	33.7	37.6	28.5	31.6	27.4	25.2	25.9	22.8	22.9	22.2	30.3
1991	———	24.4	———	———	28.3	———	———	24.0	———			

[1] Stocks in factories & warehouses (except that in hands of retailers). [2] Preliminary. *Source: Bureau of the Census* T.351

Lead

Continuing where they left off in late 1990, lead prices on the LME weakened further in 1991, falling to below 25 cents a pound towards the end of the year. Slow industry offtake, leading to increased stock levels, explained the price decline. In early November 1991, LME warehouse stocks of lead reached 113,000 tonnes, up from end-1990's total of 56,000 tonnes, and the highest amount in warehouse since April 1984.

The first deliveries of lead to a U.S.-approved LME warehouse were made in 1991, as 250 tonnes were delivered to a facility in Baltimore.

For the first seven months of 1991, domestic primary refinery production was 203,015 tonnes, 29,000 tonnes below the level in the same period of 1990. For all of 1990, primary refinery output totaled 403,657 tonnes.

Domestic recoverable mine production of lead for the same seven-month period in 1991 was 289,383 tonnes, compared with full-year 1990's 473,992 tonnes.

Over the past decade, secondary refinery production has assumed greater importance as a source of lead for industry, as recycling of lead has increased, due to environmental concerns.

Total secondary refinery production in January to July 1991 was 505,500 tonnes, versus full-year 1990 output of 922,900 tonnes. Most of that lead comes from smelters and refiners, although copper base scrap accounts for a small tonnage.

The U.S. is a minor importer of lead, taking in about 9,344 tonnes of ore and concentrates and 34,324 tonnes of refined metal in the seven-month period in 1991.

Lead consumption was down by 47,000 tonnes in the first seven months of the year, as 1.2 million fewer starting-lighting-ignition (SLI) battery units were shipped through July of 1991. Consumption in the industrial traction and consumer specialty battery sectors was lower in 1991. This slowdown, which was partly related to the recession, put seven-month usage at 690,000 tonnes, versus full-year 1990's 1.27 million tonnes.

With lead pollution in the nation's water supply becoming a major political issue, the Justice Department and the Environmental Protection Agency in July 1991 announced that they were stepping up efforts to enforce lead pollution laws. Showing the seriousness of their intent, the agencies filed suit against 12 alleged polluters, naming among them many of the major lead refiners in the U.S., including ASARCO, NL Industries, Amoco Corp., and Corning Inc.

Also, in 1991 numerous bills were introduced in Congress to tax lead refiners in an effort to fund a $1.0 billion trust fund to assist states and cities in lead abatement and mitigation projects.

Futures Market

Lead futures are traded on the London Metal Exchange (LME).

World Smelter (Primary & Secondary) Production of Lead In Thousands of Metric Tons

Year	Australia[3]	Belgium[4]	Bulgaria	Canada[3]	China[2]	France	Germany	Japan	Mexico[3]	Peru[3]	Spain	United States	U.K.[3]	USSR	Yugoslavia[3]	World Total
1981	401.8	88.2	119.0	238.2	175.0	163.9	362.3	332.3	194.7	84.2	117.1	1,139	224.5	715.0	120.5	5,384
1982	428.7	80.9	118.0	238.9	175.0	140.4	350.4	311.9	179.4	73.8	131.6	1,088	209.3	730.0	109.0	5,265
1983	405.9	84.4	116.0	241.9	195.0	128.6	352.5	317.2	197.8	72.7	143.8	1,023	226.0	745.0	127.1	5,245
1984	399.8	101.5	116.0	252.0	195.0	131.4	357.2	337.1	204.8	75.2	160.0	1,023	227.4	755.0	121.3	5,423
1985	215.7	114.3	116.0	241.6	210.0	223.6	356.3	367.0	234.0	86.9	156.1	1,110	327.2	750.0	100.0	5,641
1986	171.0	98.3	112.0	257.7	240.0	230.4	366.6	361.5	215.0	71.4	130.0	995.1	328.6	755.0	113.0	5,551
1987	216.7	108.0	110.0	230.7	245.0	245.9	340.4	338.3	212.0	76.3	122.7	1,084	338.2	750.0	112.4	5,718
1988	183.0	126.6	110.0	268.1	245.0	255.7	345.1	340.0	206.1	61.5	120.8	1,129	373.8	727.0	109.9	5,850
1989[1]	208.0	109.4	99.0	244.5	300.0	267.4	349.8	333.4	197.5	78.4	113.3	1,289	350.0	745.0	97.2	5,987
1990[2]	227.0	120.0	99.0	224.0	290.0	260.0	348.5	329.0	214.0	74.3	120.0	1,327	360.0	700.0	82.0	5,942

[1] Preliminary. [2] Estimated. [3] Refined & bullion. [4] Includes scrap. *Source: Bureau of Mines* T.355

Consumption of Lead in the United States by Products In Thousands of Metric Tons

Year	Ammunition	Bearing Metals	Pipes, Traps & Bends[2]	Cable Covering	Calking Lead	Casting Metals	Glass & Ceramic Pdt's.	Paints	Sheet Lead	Solder	Storage Battery Grids, Post, etc.	Storage Battery Oxides	Gasoline Additives	Type-Metal	Brass and Bronze	Total Consumption
1981	49.5	6.9	8.8	12.1	5.5	18.6	44.3	16.3	19.4	29.7	342.2	428.0	111.4	7.8	13.3	1,167.1
1982	44.2	6.1	8.6	15.2	4.1	25.1	34.5	13.4	15.2	28.5	312.6	391.7	119.2	2.8	11.4	1,075.4
1983	43.7	5.8	13.1	10.5	3.6	16.2	39.7	15.4	14.2	28.5	382.3	424.6	89.1	2.5	11.0	1,148.5
1984	47.8	4.7	13.7	12.3	4.0	15.8	46.1	17.4	14.7	24.4	426.3	439.2	78.9	2.2	7.0	1,207.0
1985	50.2	5.4	11.9	15.5	2.3	19.4	44.1	14.1	14.8	21.4	468.7	372.2	45.7	1.6	7.8	1,148.3
1986	44.4	5.5	12.5	17.1	1.8	10.3	40.8	14.4	17.3	21.3	488.9	364.9	28.5	.3	9.1	1,125.5
1987	46.8	5.3	11.5	20.1	1.9	16.6	N.A.	N.A.	17.4	19.8	529.4	424.2	N.A.	N.A.	9.9	1,230.4
1988	52.7	6.0	11.2	16.2	1.6	15.9	N.A.	N.A.	17.5	19.1	514.7	455.0	N.A.	N.A.	10.0	1,245.2
1989	62.9	2.6	9.8	22.6	1.8	16.2			21.0	17.0	552.3	459.8			9.6	1,283.2
1990[1]	35.7	1.4	4.6	10.0		7.4			10.5	8.2	—— 509.8 ——		20.2		5.0	644.2

[1] Preliminary. [2] Building. *Source: Bureau of Mines* T.358

LEAD

Salient Statistics of Lead in the United States In Thousands of Metric Tons

Year	Net Import Reliance as a % of Apparent Consumption	Production — of Refined Lead From —			Total Value of Refined Mil. $	Secondary Lead Recovered				Total Value of Secondary Mil. $	Dec. 31 Stocks		Avg. Price (¢ per Lb.)	
		Domestic Ores[2]	Foreign Ores[2]	Total Primary		As Refined Metal	In Antimonial Lead	In Other Alloys	Total		Primary	Consumers' Stocks[3]	New York	London
1978	12	501.6	63.5	565.2	419.3	282.6	409.9	76.5	769.2	570.7		125.2	33.65	29.86
1979	5	530.0	45.6	575.6	668.0	352.2	378.8	70.3	801.4	930.0		153.2	52.64	54.52
1980	[5]	508.2	39.4	547.6	512.6	315.2	306.7	53.7	675.6	632.4		126.2	42.46	41.21
1981	1	440.2	55.1	495.3	398.9	282.2	304.4	54.6	641.1	516.3		123.2	36.53	33.30
1982	11	459.9	52.3	512.2	288.4	240.5	284.4	46.4	571.3	321.7		97.2	25.54	24.66
1983	20	463.9	55.2	519.2	248.1	189.6	271.6	42.3	503.5	240.7	53.4	100.8	21.68	19.27
1984	20	324.0	65.4	389.4	219.3	263.4	327.8	42.1	633.4	266.3	45.1	97.1	25.55	20.12
1985	12	422.7	71.4	494.0	207.7	273.7	299.3	42.7	615.7	258.9	84.5	93.1	19.07	17.84
1986	20	348.2	22.1	370.3	180.0	289.5	291.9	43.3	624.8	303.7	20.4	83.8	22.05	18.43
1987	17	336.5	37.1	373.6	296.0	348.9	319.5	41.8	710.1	562.6	21.6	88.6	35.94	26.99
1988	13	371.3	20.7	392.1	321.0	367.1	346.8	28.6	742.5	603.0	15.4	89.9	37.14	29.73
1989	8	379.0	17.4	396.5	343.9	412.0	375.9	25.7	813.6	701.5	15.6	82.7	39.35	30.63
1990[1]	3	386	18	400			273.3				25.5	63	46.00	37.00
1991[4]	4	330	10	340							30.6		34.00	25.00

[1] Preliminary. [2] And base bullion. [3] Also at secondary smelters. [4] Estimates. [5] Net exporter. *Source: Bureau of Mines* T.357

U.S. Mine Production of Recoverable Lead In Thousands of Metric Tons

Year	Arizona	California	Colorado	Idaho	Illinois	New York	Missouri	Montana	Nevada	New Mexico	Oklahoma	Utah	Virginia	Washington	Wisconsin	Total U.S.[2]
1978	.4	N.A.	15.2	44.8	N.A.	1.0	461.8	.1	.7	N.A.	—	2.5	1.8	N.A.	N.A.	529.7
1979	.4	N.A.	7.6	42.6	N.A.	.5	472.1	.3	—	N.A.	—	N.A.	1.6	—	N.A.	525.6
1980	.2	N.A.	10.3	38.6	N.A.	.9	497.2	.3	—	—	—	—	1.6	N.A.	—	550.4
1981	1.0	N.A.	11.4	38.4	N.A.	1.0	389.7	.2	N.A.	N.A.	—	1.7	1.6	—	—	445.5
1982	.4	N.A.	N.A.	N.A.	N.A.	1.1	474.5	.7	N.A.	N.A.	—	N.A.	—	N.A.	—	512.5
1983	.2	N.A.	N.A.	25.9	N.A.	1.3	409.3	1.2	—	.3	—	—	—	—	—	449.3
1984	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	278.3	N.A.	N.A.	—	—	N.A.	—	—	—	322.7
1985	.6	—	N.A.	33.7	N.A.	N.A.	371.0	.8	—	N.A.	—	—	—	—	—	414.0
1986	N.A.	—	N.A.	10.0	N.A.	N.A.	319.9	N.A.	—	—	—	—	—	—	—	339.8
1987	—	—	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	—	N.A.	—	—	—	—	—	311.3
1988	Not Available						353.2	8.3	Not Available							385.0
1989[1]	Not Available						366.9	Not Available								410.9
1990[3]	Not Available						372	Not Available								474
1991[3]	Not Available						307	Not Available								361

[1] Preliminary. [2] Includes Alaska. [3] Estimate. *Source: Bureau of Mines* T.356

U.S. Foreign Trade of Lead In Thousands of Metric Tons

Year	Exports					Imports for Consumption					General Imports From:						
											Ore, Flue Dust & Matte			Pigs & Bars			
	Ore & Concentrate	Unwrought Lead[3]	Wrought Lead[4]	Scrap	Ash & Residues[5]	Ores, Flue Dust or Fume & Mattes	Base Bullion	Pigs & Bars	Reclaimed Scrap, Etc.	Value Million $	Australia	Peru	Canada	Australia	Mexico	Peru	Canada
1978		3.2	5.1	98.6		61.9	4.3	225.4	3.3	203.0	6.5	6.3	19.6	16.3	80.2	25.7	70.4
1979		7.4	3.3	119.7		44.4	1.7	182.6	4.0	248.3	1.9	12.4	12.8	17.3	73.6	17.9	
1980	27.6	156.5	8.0	119.7		29.6	.3	81.3	2.9	116.5	3.0	18.0	8.5	11.3	28.6	3.3	34.9
1981	33.0	16.8	6.5	59.4		27.2	.4	100.1	2.7	110.5	2.2	14.1	23.5	10.9	33.7	2.9	50.8
1982	29.1	51.0	4.6	51.8		18.9	—	94.9	4.8	69.9	7.7	14.5	4.8	7.3	23.5	8.3	49.8
1983	20.1	17.7	2.8	50.9		19.8	.1	134.4	4.2	89.9	10.0	22.7	6.1	10.9	34.9	10.1	72.7
1984	11.9	5.0	2.5	45.1	9.1	29.9	—	161.5	5.0	104.2	17.0	22.7	14.1	10.9	39.5	9.2	94.9
1985	10.0	25.4	2.0	59.9	10.0	2.6	.8	131.4	3.2	56.5	12.3	15.2	5.2	3.6	33.8	5.2	90.1
1986	4.4	11.2	1.4	59.0	7.2	4.6	.1	140.2	3.3	62.1	11.5	8.4	62.9	—	29.5	1.1	105.3
1987	8.8	4.4	5.8	52.8	3.5	.9	10.8	185.7	6.6	133.8	1.7	19.1	201.2	.1	42.6	.4	92.6
1988	20.9	7.5	6.0	81.9	15.5	20.6	4.0	148.6	7.3	124.8	1.4	11.4	221.8	6.7	30.9	—	104.8
1989	57.0	28.5	5.4	59.9	10.0	5.1	5.8	115.7	.7	86.7	1.9	12.9	189.9	—	19.2	4.3	90.5
1990[1]	57	64		75	13	13.4	2.7	104.2	.2		1.2	7.1	124.3	6.9	25	1.0	70
1991[2]	80	90		72	11	9.8	.4	64.3	.7		1.0	3.9	226.7	1.5	11.9	1.0	52.0

[1] Preliminary. [2] Estimate. [3] And lead alloys. [4] Blocks, Pigs, etc. [5] Formerly drosses & flue dust. *Source: Bureau of Mines* T.359

Average Price of Pig Lead, U.S. Primary Producers (Common Corroding)[1] In Cents Per Pound

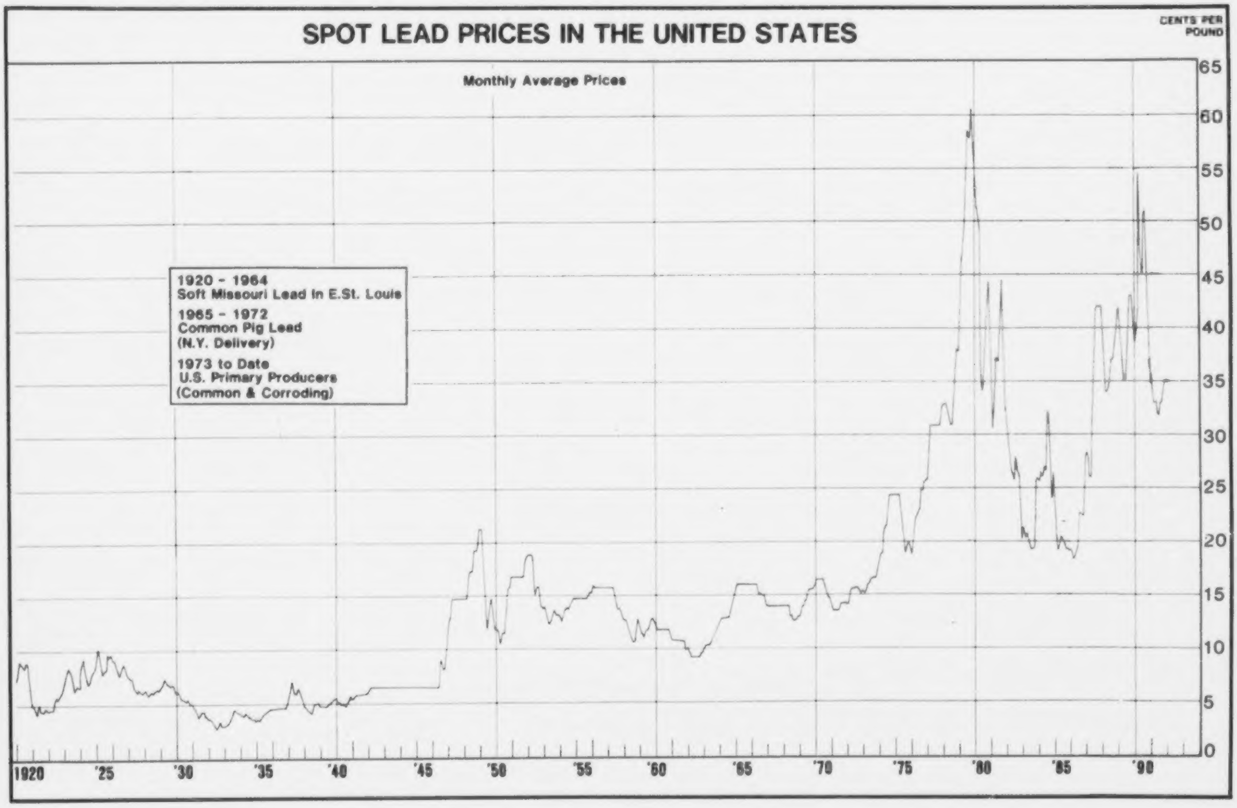
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	21.60	20.87	20.43	21.00	20.10	19.34	19.30	19.38	22.24	25.62	26.00	25.69	21.80
1984	26.38	26.00	26.45	27.00	26.55	29.00	32.14	30.13	25.68	24.04	26.42	23.11	26.91
1985	20.45	19.76	19.24	20.48	20.50	20.00	19.88	19.32	19.44	18.97	19.06	19.05	19.68
1986	18.70	18.41	18.55	18.93	19.58	22.41	22.63	22.52	23.43	25.53	27.93	28.37	22.25
1987	27.75	26.03	26.00	27.01	35.10	36.77	41.82	42.00	42.00	42.00	42.00	42.00	35.95
1988	38.00	34.83	34.00	34.00	34.67	36.59	37.00	37.04	38.81	39.58	40.75	42.04	37.28
1989	40.22	37.00	35.00	35.03	36.14	38.82	39.97	41.30	43.00	43.00	40.55	38.55	39.05
1990	39.73	41.74	54.45	48.10	45.00	45.14	50.62	51.00	49.08	44.52	41.33	37.03	45.63
1991	34.18	33.00	33.00	33.00	32.00	31.80	33.00	33.00	33.70	35.00	35.00	35.00	33.47
1992	35.00	35.00											

[1] N.Y. Delivery. *Source: American Metal Market* T.360

Refiners Production[1] of Lead in the United States In Thousands of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	50.3	45.2	44.0	36.1	54.3	53.0	44.2	46.4	49.2	50.6	50.8	48.6	572.6
1983	57.0	50.9	52.8	48.9	47.2	42.0	39.5	45.3	41.2	50.0	50.9	46.4	572.3
1984	51.5	51.4	43.0	40.0	39.2	26.2	28.4	29.1	25.3	40.8	28.0	26.5	429.2
1985	43.1	50.3	56.3	52.7	53.4	50.9	32.5	46.6	44.9	39.3	30.1	44.5	544.5
1986	47.4	41.6	49.4	40.2	40.2	26.5	16.9	31.3	27.5	28.6	28.5	30.1	408.2
1987	38.8	33.6	36.0	33.2	34.2	29.5	28.8	30.9	33.4	37.6	39.5	36.3	411.8
1988	34.3	35.4	39.1	34.3	36.2	34.8	31.8	25.3	32.1	49.6	40.0	39.3	432.2
1989	41.0	36.0	39.0	34.0	36.2	35.5	35.7	38.0	39.3	34.7	35.3	32.3	437.0
1990	38.5	37.9	36.9	38.6	36.4	33.3	34.0	38.0	37.4	42.4	36.9	34.8	445.0
1991	33.9	34.0	37.2	33.3	29.8	24.7	30.8	31.1	32.4				

[1] Represents refined lead produced from domestic ores by primary smelters plus small amount of secondary material passing through these smelters. Includes GSA metal purchased for remelt. *Source: American Bureau of Metal Statistics, Inc.* T.362


SPOT LEAD PRICES IN THE UNITED STATES

LEAD

U.S. Mine Production of Recoverable Lead In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	42.0	42.8	46.5	21.0	24.1	12.3	24.2	23.6	18.7	22.5	19.6	25.5	322.7
1985	31.8	33.3	37.6	39.3	37.1	32.5	34.5	34.8	30.9	36.9	32.5	33.0	414.0
1986	40.4	36.3	38.2	34.0	25.0	23.8	25.2	23.4	24.2	24.3	20.8	24.2	339.8
1987	24.2	23.9	27.9	23.6	27.0	26.3	29.0	24.1	28.2	28.4	23.2	25.5	311.4
1988	27.9	28.2	36.0	32.7	30.3	32.5	30.4	36.3	33.1	34.4	31.1	31.8	385.0
1989	33.3	31.0	34.4	33.2	33.8	36.1	33.2	38.6	34.3	35.1	32.9	30.1	410.9
1990[1]	38.6	35.3	36.1	33.7	37.0	35.0	41.1	45.9	36.8	42.2	37.4	35.5	474.0
1991[1]	41.5	41.1	41.6	37.8	43.5	36.4	47.5	41.1	36.1	38.4			

[1] Preliminary. *Source: Bureau of Mines* T.359A

Total Stocks of Lead[1] in the United States at Refiners, at End of Month In Thousands of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1984	63.3	70.3	76.1	81.5	84.2	83.5	84.9	78.4	64.8	66.2	53.0	49.7
1985	48.2	59.6	79.3	90.4	107.2	128.9	125.0	118.2	114.1	102.4	90.6	93.1
1986	96.1	104.1	116.4	115.8	116.7	105.9	89.1	81.0	57.8	41.9	30.0	22.5
1987	34.2	37.3	39.3	31.5	32.6	20.5	11.7	12.1	12.7	16.4	19.9	23.8
1988	24.7	30.5	30.2	31.8	26.5	16.6	16.2	6.6	5.1	11.6	13.1	17.0
1989	28.7	36.3	43.2	41.4	32.7	31.9	34.6	30.8	30.3	20.7	16.1	17.2
1990	16.2	20.2	18.1	23.3	21.3	21.6	22.9	22.0	22.7	26.2	25.1	28.1
1991	26.7	26.8	29.8	23.4	19.3	17.9	16.9	10.0	7.3			

[1] Stocks at own plant & elsewhere. *Source: American Bureau of Metal Statistics, Inc.* T.364

Total[1] Lead Consumption in the United States In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	112.7	94.1	96.8	89.5	87.3	96.4	82.7	97.3	96.7	103.2	96.9	95.1	1,207
1985	95.8	102.6	101.9	91.3	93.1	83.3	73.0	111.2	108.9	107.6	96.3	83.3	1,148
1986	100.8	89.0	83.0	94.7	89.8	87.7	73.8	98.9	105.9	110.5	94.9	96.6	1,125
1987	96.5	91.1	103.0	101.0	101.4	103.5	97.4	103.2	108.5	119.1	105.8	100.1	1,230
1988	99.8	101.4	116.0	99.3	104.0	103.6	92.1	102.5	103.0	110.6	103.4	95.1	1,231
1989	104.7	98.3	101.2	99.2	101.3	101.6	95.2	102.7	105.9	114.0	106.2	97.3	1,283
1990[2]	104.1	106.7	111.9	101.1	106.2	103.2	97.7	112.4	104.6	109.0	104.3	97.3	1,275
1991[2]	101.3	105.3	101.2	101.3	98.4	92.4	90.8	101.9	102.7	105.9			

[1] Represents total consumption of primary & secondary lead as metal, in chemicals, or in alloys. [2] Preliminary. *Source: Bureau of Mines* T.365

U.S. Lead Recovered from Scrap (Lead Content) In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	44.4	48.6	47.6	48.5	46.6	46.7	44.5	50.0	49.0	51.7	48.1	41.3	633.4
1985	41.3	43.2	46.4	43.9	44.7	34.9	41.1	45.5	50.8	53.9	54.2	43.4	594.2
1986	49.8	52.9	53.2	50.2	59.1	46.0	41.0	50.2	46.2	51.3	50.8	47.5	614.9
1987	50.0	49.9	54.4	55.6	59.3	53.9	59.9	63.4	53.3	67.3	55.9	55.1	710.2
1988	52.2	57.5	60.1	55.9	52.2	59.4	55.3	56.3	60.7	61.8	61.6	59.7	737.0
1989	62.1	58.6	67.5	64.1	65.3	66.3	61.6	65.9	64.4	73.5	67.1	66.9	808.6
1990[1]	68.7	69.6	73.0	69.4	66.9	67.9	67.0	71.8	71.0	77.5	72.3	77.3	923.0
1991[1]	79.0	74.4	71.0	72.0	72.0	70.7	69.8	70.0	72.3	74.3			

[1] Preliminary. *Source: Bureau of Mines* T.366

Domestic Shipments[1] of Lead in the United States by Refiners In Thousands of Short Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	46.6	43.8	36.6	34.6	36.4	26.7	26.9	35.5	38.5	39.1	40.8	29.6	435.2
1985	44.8	38.9	36.6	41.5	36.7	29.1	36.4	53.4	48.9	51.2	41.9	41.9	501.2
1986	44.5	33.5	37.1	40.9	39.3	37.3	33.7	39.3	50.7	44.6	40.4	37.6	478.8
1987	27.0	30.5	34.1	41.1	34.8	40.0	37.8	30.1	33.1	33.8	35.7	32.7	410.7
1988	33.5	29.5	39.2	33.0	41.4	44.7	32.0	34.7	33.7	43.0	38.5	35.5	438.7
1989	29.3	28.5	32.2	35.7	45.1	36.4	32.8	41.5	40.0	44.2	40.2	31.1	437.1
1990	39.3	33.9	39.1	33.5	38.4	32.9	32.6	39.0	36.6	38.9	38.0	31.8	433.7
1991	35.4	33.8	34.4	39.8	33.9	26.0	31.8	37.9					

[1] Includes GSA metal. *Source: American Bureau of Metal Statistics, Inc.* T.363

Lumber & Plywood

U.S. housing starts fell 14.9 percent to 1.015 million dwelling units in 1991, the lowest since 1945. The seasonally adjusted annual rate bottomed at 847,00 units in January and topped 1 million in each of the last seven months of 1991. Single-family homes accounted for 83 percent of the starts. Housing completions dropped 16.8 percent to 1.088 million units, the least since 1.006 million in 1982. Single-family completions fell to 834,500 units from 966,000 in 1990.

The Mortgage Bankers Association expected 1992 starts to rebound to 1.3 million units, helped by lower mortgage rates and President Bush's proposal of a $5,000 tax credit for first-time home buyers (effective from February 1 through December 31, 1992, but not approved by Congress at this writing).

In value, residential construction fell by 8 percent to $97.42 billion from $105.61 billion in 1990, according to F.W. Dodge, the construction statistics unit of McGraw Hill. Total construction was down 8 percent to $226.76 billion from $246.24 billion. Contracts for nonresidential buildings fell 11 percent to $80.49 billion. Dodge's Construction Index, seasonally adjusted, ended 1991 at 148, up from 130 a year earlier (1982 = 100).

Since more than 80 percent of U.S. softwood lumber and 65 percent of all structural panels go into residential construction, 1991 was a terrible year for the forest products industry. The Commerce Department estimated that U.S. lumber production fell by 11 percent to 44.2 billion board feet from 46.5 billion in 1990. Preliminary American Plywood Association data indicate U.S. structural panel output (including oriented strand board) declined by 11 percent to 24.5 billion square feet, the least since 1985. Output at western mills fell by 21 percent to 7.6 billion square feet, the second-lowest total in 30 years.

U.S. softwood plywood production was 19.4 billion square feet, compared with 20.7 billion in 1990 and capacity of 25.3 billion square feet. An estimated 123 softwood plywood mills were operating in 1991, down from 128 in 1990. Like lumber mills, plywood producers were hurt by sharply restricted log supplies. Pacific Northwest mills faced set-asides to protect the northern spotted owl, declared a threatened species in 1990 under the Endangered Species Act.

In May 1991, the U.S. Fish and Wildlife Service identified 190 critical habitat areas, totaling 11.6 million acres, for the bird in Western Oregon, Washington, and Northern California. Then the Seattle Audubon Society won an injunction barring the Forest Service from selling timber on 66,000 acres in a national forest until a spotted owl recovery plan was completed. In response, cash lumber prices soared to all-time highs. The Random Lengths Framing Lumber Composite Price hit a record $311 on June 14, up $73 from the first week in May on panic buying. But dealers had trouble moving inventories, and mills increased output to take advantage of the rally. When demand did not improve, the market lost its gains and then some in July. By August 2, the Composite Price had fallen by $83 to $228, only $4 higher than it was in August 1990.

On October 1, the government called in the Endangered Species Committee, popularly called the God Squad, a panel chaired by the secretary of the interior with the power to decide whether 44 federal timber sales containing 240 million board feet should be exempted from the owl plan because of economic hardship. Its decision was expected to be challenged in the courts.

Canada cancelled the Memorandum of Understanding regulating U.S. imports of Canadian lumber on October 4. The U.S. then imposed import tariffs on Canadian lumber equal to the discontinued Canadian export rates. But 80 percent of Canadian shipments to the U.S. came from British Columbia, where stumpage fees were high enough that the province's lumber was not taxed before or after the agreement was killed. The U.S. International Trade Commission, in response to a complaint from domestic lumber producers, investigated whether Canada was subsidizing exports to the U.S. The ITC ruled on December 12 that the U.S. industry had been hurt by Canadian imports. However, it then ruled on January 2 that its countervailing duty investigation was, as the law provides, a "complicated case," further postponing a ruling.

Futures Market

Lumber futures and options on those futures are traded on the Chicago Mercantile Exchange.

U.S. Housing Starts: Seasonally Adjusted Annual Rate In Thousands (Total Is Actual Starts)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1983	1,586	1,699	1,606	1,472	1,776	1,733	1,785	1,910	1,710	1,715	1,785	1,688	1,703
1984	1,897	2,260	1,663	1,851	1,774	1,843	1,732	1,586	1,698	1,590	1,689	1,612	1,750
1985	1,711	1,632	1,800	1,821	1,680	1,676	1,684	1,743	1,676	1,834	1,698	1,942	1,742
1986	1,972	1,848	1,876	1,933	1,854	1,847	1,782	1,807	1,687	1,681	1,623	1,833	1,805
1987	1,840	1,787	1,715	1,622	1,607	1,583	1,592	1,587	1,685	1,535	1,659	1,391	1,621
1988	1,391	1,511	1,528	1,576	1,392	1,463	1,478	1,459	1,463	1,532	1,567	1,577	1,488
1989	1,678	1,465	1,409	1,343	1,308	1,414	1,424	1,325	1,263	1,423	1,347	1,273	1,376
1990[1]	1,568	1,488	1,307	1,216	1,206	1,189	1,153	1,131	1,107	1,026	1,130	971	1,207
1991[1]	847	992	907	977	983	1,034	1,049	1,056	1,017	1,089	1,066		

[1] Preliminary. *Source: Bureau of the Census.*

LUMBER & PLYWOOD

Salient Statistics of Lumber in the United States

Year	Industrial Roundwood Used for Production								Fuel-wood Con-sump-tion	Con-sump-tion All Pdt's.	National Forest Stumpage Prices					
	Lumber	Pulp Products	Ply-wood & Veneer	Other Pdts.[2]	Total[2]	Total Imports	Total Ex-ports	Total Con-sumption			All Eastern Hard-woods	Doug-las Fir	South-ern Pine	West-ern Hemlock	Ponder-osa Pine	Maple Sugar
	In Million Cubic Feet										$ Per 1,000 Board Ft.					
1982	4,635	3,980	1,135	435	10,910	3,015	1,995	11,930	3,355	15,285	56.40	118.20	127.20	44.50	66.90	71.10
1983	5,370	4,165	1,365	445	12,065	3,710	2,110	13,665	3,235	16,900	60.10	161.60	140.60	62.20	104.00	55.10
1984	5,770	4,355	1,400	455	12,725	4,165	2,060	14,830	3,620	18,450	90.10	132.90	139.40	61.80	122.70	80.50
1985	5,665	4,165	1,420	465	12,515	4,340	2,070	14,785	3,450	18,235	65.40	126.20	90.70	50.50	101.40	70.00
1986	6,545	4,545	1,505	475	13,845	4,375	2,300	15,920	3,115	19,030	69.90	160.70	103.60	74.70	156.60	66.20
1987	6,990	4,670	1,650	495	14,670	4,575	2,650	16,595	3,150	19,745	88.10	190.20	135.70	105.40	209.30	80.50
1988[1]	6,920	4,885	1,630	510	14,985	4,445	3,200	16,230	3,360	19,590	151.30	256.00	141.90	162.90	182.10	108.40
1989[1]											135.80	389.80	131.40	223.30	292.00	128.60

[1] Preliminary. [2] Excludes fuelwood. Includes cooperage logs, poles & piling, fence posts, etc. *Sources: National Lumber Manufacturers Ass'n.; U.S. Dept. of Commerce; Forest Service* T.367

United States Lumber Shipments In Millions of Board Feet

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	1,637	1,837	2,148	2,336	2,308	2,513	2,363	2,450	2,260	2,506	2,353	2,162	28,935
1983	2,435	2,290	2,632	2,683	2,775	2,764	2,537	2,669	2,737	2,795	2,404	2,445	35,239
1984	2,589	2,603	3,022	2,875	2,852	2,993	2,756	2,950	2,688	3,154	2,922	2,397	37,221
1985	2,666	2,602	3,013	3,496	3,349	3,031	2,944	3,294	3,162	3,221	2,828	2,809	37,023
1986	2,955	2,899	3,478	3,321	3,538	3,498	2,979	3,344	3,291	3,689	3,480	3,791	42,618
1987	3,350	3,302	3,735	3,686	3,656	4,039	3,671	3,812	3,540	4,034	3,470	3,865	47,761
1988	3,790	4,092	4,320	4,257	4,261	4,309	3,688	3,929	4,038	3,871	3,656	3,649	49,134
1989	3,914	3,417	3,877	3,846	4,163	4,420	3,760	3,977	3,823	4,081	3,854	3,626	49,003
1990[1]	4,035	3,870	4,317	4,173	3,952	4,176	3,912	3,987	3,453	3,890	3,357	2,873	46,083
1991[1]	3,240	3,301	3,617	4,037	4,028	3,764	3,412	3,926	3,638				

[1] Preliminary. *Source: National Lumber Manufacturers' Association* T.368

Stocks (Gross) of Softwood[2] Lumber in the United States, Beginning of Month In Millions of Board Feet

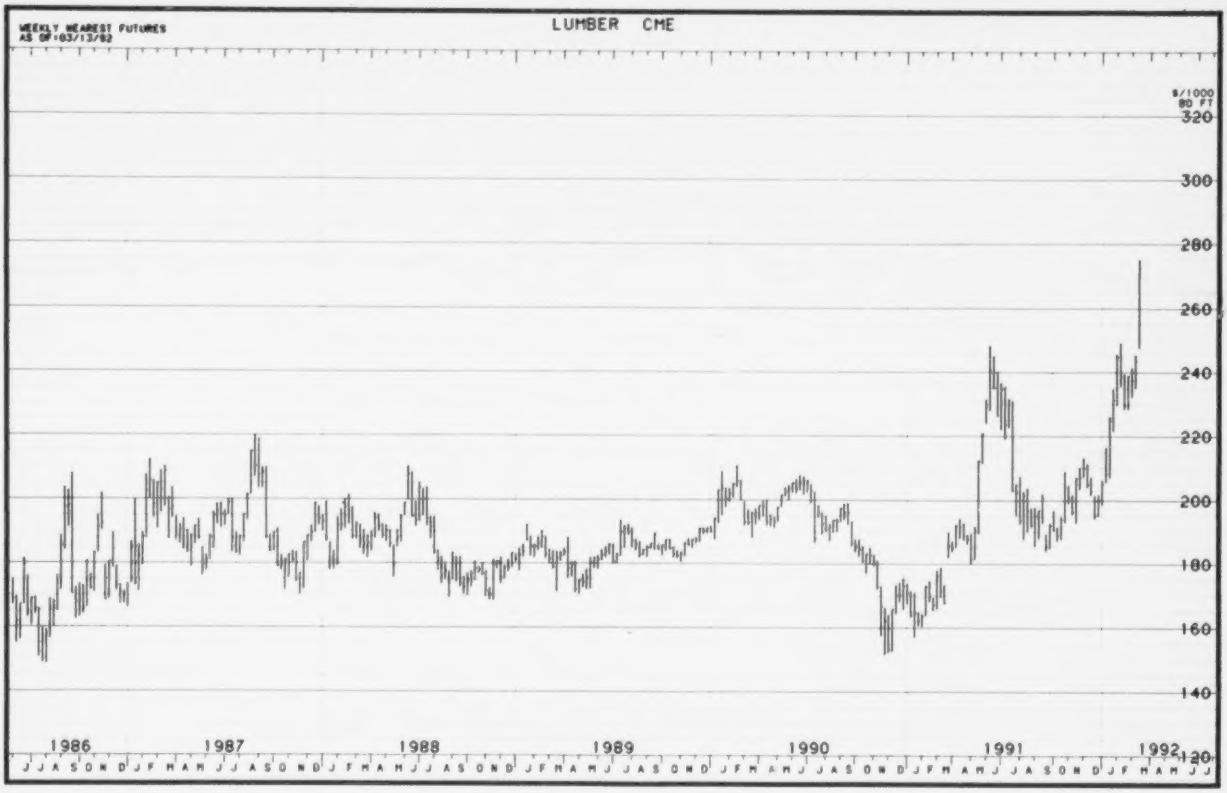
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	5,894	6,016	6,068	6,042	5,983	5,915	5,853	5,867	5,977	6,163	5,986	5,881
1983	5,809	5,770	5,950	5,997	5,924	5,824	5,772	5,817	5,858	5,870	5,862	5,964
1984[2]	4,606	4,424	4,494	4,602	4,717	4,715	4,658	4,560	4,509	4,573	4,515	4,590
1985	4,594	4,533	4,637	4,733	4,508	4,415	4,633	4,680	4,687	4,699	4,850	4,870
1986	4,765	4,842	4,959	4,846	4,886	4,748	4,605	4,615	4,722	4,840	4,929	5,038
1987	5,040	5,039	5,112	5,203	5,181	5,097	4,927	4,928	4,755	4,855	4,787	4,823
1988	4,771	4,867	4,950	4,994	4,939	4,894	4,685	4,677	4,765	4,823	4,951	4,979
1989	4,999	4,896	4,818	4,837	4,810	4,740	4,746	4,748	4,797	4,762	4,908	4,934
1990[1]	4,898	5,022	5,022	5,020	4,961	5,043	4,831	4,783	4,752	4,810	4,834	4,809
1991[1]	4,734	4,925	4,949	4,946	4,849	4,600	4,699	4,684	4,793	4,786		

[1] Preliminary. [2] Prior to 1984 data includes hardwoods. *Source: National Lumber Manufacturers' Association* T.369

Lumber Production[1] in the United States In Millions of Board Feet

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	1,810	1,891	2,148	2,281	2,251	2,338	2,376	2,560	2,445	2,333	2,247	2,004	28,849
1983	2,484	2,481	2,682	2,623	2,645	2,718	2,585	2,714	2,748	2,787	2,504	2,345	35,370
1984	2,740	2,678	3,104	2,983	2,828	2,968	2,685	2,933	2,776	3,154	2,814	2,295	37,436
1985	2,727	2,718	3,085	3,296	3,256	3,101	3,034	3,299	3,196	3,387	2,851	2,649	37,352
1986	3,092	3,046	3,347	3,362	3,405	3,355	2,961	3,441	3,397	3,820	3,496	3,623	42,676
1987	3,293	3,307	3,742	3,616	3,518	3,905	3,662	3,737	3,617	3,942	3,458	3,829	49,395
1988	3,814	4,042	4,389	4,247	4,245	4,137	3,671	4,056	4,180	4,040	3,715	3,641	49,576
1989	3,849	3,311	3,758	3,773	4,025	4,273	3,683	4,023	3,787	4,172	3,811	3,615	58,749
1990[2]	4,160	3,862	4,300	4,121	4,084	3,944	3,976	4,060	3,602	4,015	3,412	2,914	54,638
1991[2]	3,534	3,410	3,661	3,958	3,837	3,762	3,664	3,808	3,645				

[1] Adjusted with Census reports on lumber production. [2] Preliminary. *Source: National Lumber Manufacturers' Association* T.374



Average Open Interest of Lumber Futures at Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	9,886	11,091	10,192	11,340	10,258	8,801	8,292	8,579	8,610	7,557	6,413	7,020
1984	7,907	8,295	8,592	9,082	8,305	7,628	7,426	7,822	8,094	8,354	9,197	9,605
1985	9,953	9,704	8,102	9,115	9,115	10,038	8,823	8,672	7,672	7,247	6,819	6,567
1986	5,486	6,121	8,866	9,287	8,171	6,112	5,441	5,197	5,701	5,262	5,275	5,732
1987	6,077	7,330	6,406	6,950	6,019	6,770	6,563	7,439	6,961	7,247	6,579	6,572
1988	6,212	6,701	5,791	6,395	5,548	5,644	5,586	6,272	5,527	5,697	5,368	5,919
1989	7,982	7,484	7,436	8,244	7,363	7,921	8,248	8,055	7,065	7,192	6,600	6,167
1990	6,078	6,061	4,991	4,957	4,538	4,359	3,570	3,028	2,881	3,105	2,632	2,001
1991	1,922	2,003	2,023	2,354	2,076	2,601	2,571	2,181	2,276	2,480	2,206	1,606
1992	1,969											

Source: Chicago Mercantile Exchange T.370

Volume of Trading of Lumber Futures at Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	51,268	45,193	44,717	44,116	40,828	47,512	34,624	35,432	29,835	47,761	51,046	44,387	516,619
1983	54,976	56,706	51,520	48,327	77,107	73,554	62,053	76,322	68,019	68,228	44,266	49,925	731,003
1984	51,170	70,031	57,075	68,314	88,009	59,592	60,156	65,739	60,035	61,012	52,496	59,939	753,568
1985	71,719	55,737	56,718	65,762	62,766	57,422	43,525	39,151	36,517	34,703	29,556	27,972	581,548
1986	29,570	34,647	61,718	64,176	44,778	49,929	35,203	42,212	44,961	35,847	28,912	30,577	502,530
1987	40,351	49,167	40,504	39,211	27,954	33,505	31,345	38,876	34,039	39,437	32,052	30,648	437,089
1988	35,451	32,410	32,886	30,386	28,100	37,508	27,550	33,454	29,743	24,632	26,131	23,238	371,489
1989	29,963	25,857	23,947	31,427	26,789	26,712	20,258	19,514	18,790	18,965	17,286	14,395	273,903
1990	27,416	21,914	20,948	18,362	19,053	16,084	16,465	13,446	8,914	11,839	15,794	11,749	201,984
1991	10,535	13,460	10,326	11,309	15,135	19,029	19,350	14,912	12,214	14,054	10,295	9,902	160,521

Source: Chicago Mercantile Exchange T.371

Residential Construction Contracts Awarded (All Types) in U.S. In Millions of Dollars

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	4,227	4,167	5,957	6,617	5,855	5,805	5,810	4,726	4,704	4,718	3,648	3,677	60,164
1982	2,991	3,045	4,542	4,645	5,060	5,674	5,188	5,354	5,560	5,548	5,784	5,401	59,210
1983	5,080	4,942	7,945	7,859	8,594	10,223	8,532	9,113	8,698	8,223	7,604	6,596	93,567
1984	6,809	6,989	9,085	9,518	10,831	9,879	8,845	9,162	8,062	8,494	7,489	5,956	101,389
1985	6,684	6,192	9,884	10,111	10,523	9,595	10,240	9,971	9,465	9,878	8,295	7,542	108,662
1986	7,443	7,208	10,002	12,416	12,033	11,923	11,463	10,710	10,699	11,197	8,750	8,507	122,896
1987	7,874	7,920	11,228	11,577	10,664	11,612	11,441	10,879	10,445	10,290	8,432	8,716	121,128
1988	6,739	7,997	11,031	10,679	11,686	12,430	10,099	11,788	10,519	10,473	9,450	8,897	121,940
1989	7,515	7,137	10,118	10,999	11,389	11,568	10,318	11,554	10,159	10,517	9,278	7,442	120,436
1990[1]	7,579	7,240	9,940	9,722	10,946	10,433	9,745	9,941	8,530	8,530	7,008	5,308	105,352
1991[1]	5,091	5,185	6,785	8,712	9,190	8,909	9,695	9,764	8,941	9,984			

[1] Preliminary. *Source: F. W. Dodge Co.* T.372

United States Imports of Sawmill Products In Ths. of Metric Feet Beginning 1986[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	879	933	1,055	885	1,153	1,099	1,048	1,090	1,057	1,118	1,092	885	12,294
1984	941	1,135	1,108	1,098	1,073	1,172	1,202	1,191	1,298	1,185	1,104	1,108	13,615
1985	967	1,190	1,212	420	1,431	1,445	1,318	1,308	1,307	1,395	1,146	1,039	14,178
1986[2]	2,627	2,735	3,127	3,257	3,394	3,330	3,762	3,002	3,148	2,388	1,895	1,808	34,473
1987	2,544	2,884	3,136	3,051	3,144	3,264	3,136	2,790	3,420	2,983	2,856	2,705	35,912
1988	2,339	2,676	3,158	2,799	2,971	3,318	2,884	2,799	2,846	2,872	2,695	2,190	33,547
1989[1]	6,026	5,036	5,868	5,405	5,432	5,301	4,205	6,479	5,146	5,766	5,778	3,913	64,355

[1] Preliminary. [2] Prior to 1986 data are in millions of board feet. *Source: Department of Commerce* T.373

High, Low & Closing Prices of May Lumber Futures at Chicago In Dollars per 1,000 Board Feet

Year of Delivery	Year Prior to Delivery										Delivery Year					Life of Delivery Range
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1982 High	—	—	—	220.3	214.3	201.5	186.0	183.0	182.8	180.0	166.5	153.1	151.9	145.2	127.5	220.3
Low	—	—	—	204.6	199.0	183.3	160.0	157.1	162.4	163.4	147.6	142.7	137.5	120.6	115.5	115.5
Close	—	—	—	211.0	199.3	184.0	163.2	164.8	179.2	169.1	154.0	142.9	142.4	126.8	122.6	—
1983 High	192.7	186.5	178.4	171.0	168.5	170.9	169.3	179.6	191.7	195.3	209.5	206.6	194.6	193.6	221.7	209.5
Low	180.0	172.0	170.0	151.5	154.8	155.2	157.6	157.9	178.6	181.1	189.8	190.7	183.8	182.7	191.5	151.5
Close	185.0	174.0	175.5	157.5	158.6	166.0	159.7	178.7	185.9	191.0	204.9	190.7	184.6	193.2	217.2	—
1984 High	237.1	240.1	245.5	234.5	231.0	221.5	213.7	217.6	209.4	205.0	194.3	199.7	201.9	188.2	150.4	245.5
Low	228.8	228.6	222.9	221.0	214.0	200.4	195.3	198.5	196.8	189.5	184.0	182.0	186.0	148.2	125.1	125.1
Close	231.8	239.5	230.6	228.5	214.8	207.4	213.0	199.3	202.8	194.2	185.7	197.0	186.7	148.6	130.8	—
1985 High	219.0	215.5	187.0	178.7	167.5	176.2	165.0	171.3	174.1	174.0	176.7	163.0	148.3	147.4	149.9	225.0
Low	214.0	185.6	167.0	160.5	147.4	153.5	151.0	154.0	165.9	158.5	163.0	146.6	121.1	122.5	136.1	121.1
Close	215.5	185.6	175.5	166.0	154.2	155.5	157.5	169.5	170.8	173.3	164.0	147.0	124.2	137.4	148.7	—
1986 High	164.5	173.0	176.4	176.0	170.5	158.7	154.9	158.2	160.5	161.9	156.6	161.9	197.0	196.5	189.5	197.0
Low	153.0	154.0	162.0	165.5	154.5	145.2	145.6	147.7	153.0	155.0	143.3	140.0	159.1	169.0	175.1	140.0
Close	155.0	163.0	171.1	168.1	156.9	150.3	152.7	157.4	157.9	158.1	144.3	159.9	183.9	177.4	180.6	—
1987 High	173.0	172.5	172.0	174.5	169.4	177.1	179.0	176.0	172.1	173.5	181.2	198.5	203.6	193.9	193.7	203.6
Low	160.0	161.1	163.2	162.3	155.5	159.0	162.0	162.0	163.0	159.5	158.8	177.1	184.0	178.8	183.2	155.5
Close	167.0	166.0	166.3	163.5	159.9	172.0	166.6	170.5	165.6	160.0	179.5	189.0	192.4	185.9	187.7	—
1988 High	—	—	—	171.0	170.8	184.5	183.0	179.5	176.8	188.3	192.0	197.9	190.3	195.7	190.3	197.9
Low	—	—	—	164.5	168.0	169.5	172.1	165.6	166.5	173.7	177.6	184.3	181.5	186.6	175.7	164.5
Close	—	—	—	169.0	169.9	181.5	172.1	168.4	174.6	181.8	189.1	185.4	188.6	190.1	179.1	—
1989 High	177.2	180.0	178.5	181.7	184.0	179.7	181.4	184.6	184.9	190.4	194.5	193.6	185.7	188.2	178.2	194.5
Low	170.1	175.0	175.1	176.0	176.6	174.2	175.1	177.3	178.5	179.8	185.9	182.8	179.6	170.3	171.9	170.1
Close	173.0	176.8	178.2	177.1	177.5	178.9	177.5	182.4	181.9	189.0	188.3	183.4	183.5	174.5	172.3	—
1990 High	—	193.2	193.5	194.7	196.7	195.9	195.8	195.7	194.5	196.9	203.4	205.9	198.2	199.9	203.9	205.9
Low	—	188.6	189.0	191.2	192.1	190.7	191.5	190.2	189.8	191.4	192.3	194.1	190.3	191.2	193.7	188.6
Close	—	190.5	191.0	193.0	195.2	192.5	194.3	190.6	192.0	194.4	201.5	195.5	198.2	193.7	203.7	—
1991 High	—	201.5	205.1	207.9	206.5	206.8	206.9	198.7	195.9	177.5	174.0	182.3	189.8	194.2	195.5	
Low	—	196.5	198.0	201.5	202.0	203.1	197.3	191.4	159.1	159.8	162.8	162.9	177.8	185.2	180.0	
Close	—	198.5	201.0	206.1	206.5	206.6	198.4	193.5	159.7	173.5	164.3	178.7	184.8	186.4	194.7	

Source: Chicago Mercantile Exchange T.377

Average Index Price of Softwood Plywood, Western (Inland & Other Non-Southern) 1982 = 100[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	326.4	330.0	323.3	332.2	319.7	329.4	322.1	311.0	301.9	283.7	286.7	296.7	313.6
1982	291.3	288.4	288.7	283.5	279.2	287.6	282.3	278.8	274.9	272.5	276.5	284.6	282.4
1983	292.0	299.9	302.3	302.3	304.4	327.5	325.4	314.4	302.3	307.1	303.4	308.7	307.5
1984	312.4	320.1	318.0	308.7	289.7	288.8	290.3	308.6	305.2	307.2	302.4	302.4	304.5
1985	301.2	291.1	287.0	285.5	303.9	319.7	324.5	320.1	304.6	308.0	301.6	300.5	304.0
1986	300.1	298.2	312.2	329.5	321.1	311.0	310.1	307.7	311.2	309.9	308.4	304.4	310.3
1987[1]	109.0	113.2	114.2	109.8	107.4	107.0	108.3	112.8	120.5	111.3	112.7	110.7	111.4
1988	112.4	113.0	110.9	108.9	106.2	113.4	117.7	108.2	118.8	114.2	115.4	116.8	113.0
1989	119.4	125.6	127.3	129.2	130.4	126.5	132.9	124.5	132.1	142.6	137.2	125.5	129.4
1990	125.9	129.3	128.2	142.7	137.7	126.1	129.9	121.8	121.1	112.6	113.2	117.2	125.5
1991	113.3	110.7	114.9	117.1	136.6	154.5	151.8	122.5	127.0	119.6			

[1] Data prior to 1987 are the index for 1967 = 100. *Source: Bureau of Labor Statistics* (0831–01) T.379

Average Index Price of Softwood Yellow Southern Pine (Dressed) Flooring (C & Better) 1982 = 100[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	291.9	292.2	294.7	308.4	313.9	309.5	297.0	291.6	279.4	273.6	267.0	279.7	291.6
1982	278.0	273.4	273.4	285.3	283.1	298.4	305.1	288.6	287.5	279.3	284.9	293.4	285.9
1983	303.0	314.8	319.3	321.3	325.5	334.9	330.0	323.4	308.3	313.5	316.2	328.2	319.9
1984	334.0	337.8	336.1	334.5	320.4	317.1	318.8	318.4	308.5	305.4	302.4	304.8	319.9
1985[1]	106.1	102.9	103.4	102.3	114.1	121.4	112.3	103.9	100.7	99.1	97.8	97.7	105.2
1986	101.0	101.0	106.4	113.5	110.9	107.1	105.8	106.2	103.3	100.7	101.1	101.5	104.9
1987	103.5	106.8	111.5	112.8	111.5	116.1	122.9	120.7	120.8	113.7	113.5	115.9	114.1
1988	118.1	119.6	118.4	118.6	115.7	115.2	114.9	106.3	101.6	102.9	108.5	109.5	112.4
1989	110.0	109.7	107.9	106.1	104.5	108.8	113.1	107.2	105.5	112.0	105.8	105.9	108.0
1990	106.9	110.0	112.4	116.8	119.5	116.0	116.3	114.0	110.5	104.0	104.7	102.8	111.0
1991	103.9	100.3	103.6	110.0	110.8	122.5	124.5	112.2	109.5	108.9	111.1		

[1] Data prior to 1985 are the index for 1967 = 100. *Source: Bureau of Labor Statistics* (0811–02) T.381

Average Index Price of Rough Softwood Lumber—No. 2 1982 = 100[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	97.1	96.8	97.2	96.2	95.3	94.9	95.5	94.2	94.1	93.7	92.1	91.7	94.9
1983	91.1	94.0	94.0	98.5	99.0	100.2	100.2	98.9	96.3	95.8	94.6	95.1	96.5
1984	95.9	97.5	97.8	97.6	94.9	94.8	91.5	90.4	89.9	89.2	89.8	89.1	93.2
1985	90.2	90.2	88.9	88.4	88.5	89.0	88.4	89.8	88.1	87.6	87.2	87.1	88.6
1986	86.2	86.7	87.9	89.4	90.0	90.2	90.3	90.6	90.5	90.7	91.2	92.0	89.6
1987[1]	97.8	98.4	100.4	101.7	103.1	103.0	104.2	105.8	108.7	106.6	106.3	105.6	103.5
1988	105.2	106.4	109.6	111.3	112.7	111.3	113.1	113.5	109.1	108.4	107.6	106.5	109.6
1989	108.4	113.8	116.0	119.0	122.6	120.1	123.1	123.2	121.3	122.0	117.2	116.2	118.6
1990	118.4	118.4	121.2	120.9	119.1	116.2	117.4	114.2	113.1	112.3	108.8	108.7	115.8
1991	110.2	108.0	109.2	112.1	117.1	124.3							

[1] Data prior to 1987 are the index for Dec. 1980 = 100. *Source: Bureau of Labor Statistics* (0811–04) T.380

Average Index Price of Douglas Fir Softwood Lumber—Dressed 1982 = 100[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	347.2	330.4	321.8	332.7	328.5	333.1	320.1	318.3	296.8	277.6	268.0	267.0	311.8
1982	266.4	259.4	258.5	265.6	262.1	271.8	277.8	268.9	269.6	261.8	259.9	272.5	266.2
1983	312.1	370.3	376.2	375.5	390.2	404.7	407.0	381.4	345.3	332.0	318.7	324.7	361.5
1984	322.8	351.7	369.7	364.3	335.8	322.8	307.8	309.2	312.5	301.6	312.8	325.8	328.1
1985[1]	125.1	128.3	132.6	129.6	134.8	145.2	142.5	129.0	117.8	112.4	106.6	113.4	126.5
1986	118.0	114.0	118.7	130.7	134.6	124.4	128.3	127.5	129.7	125.3	123.7	119.3	124.5
1987	118.2	122.6	122.4	122.7	121.3	121.5	124.6	127.6	138.2	128.2	126.1	127.7	125.1
1988	129.8	130.9	131.6	134.2	132.0	135.7	140.6	138.6	142.7	140.5	138.7	133.6	135.7
1989	135.9	140.7	142.0	154.3	159.9	163.0	167.1	162.8	160.7	156.8	137.8	138.4	151.6
1990	141.2	144.8	146.7	149.5	141.8	137.4	143.2	139.9	136.2	126.8	125.3	127.8	138.0
1991	129.4	128.0	125.7	129.9	144.4	167.0	161.6	130.7	131.1	140.6	140.1		

[1] Data prior to 1985 are the index for 1967 = 100. *Source: Bureau of Labor Statistics* (0811–01) T.382

Magnesium

Magnesium continues to benefit from the drive to lower automobile bodyweights in order to comply with EPA fuel-consumption standards. All three major American auto producers have announced plans to incorporate additional magnesium replacements for certain aluminum and steel components in their cars and trucks.

For the first half of 1991, domestic production of primary magnesium was 64,755 tonnes, versus full-year 1990 output of 139,333 tonnes. Magnesium shipments in the period totaled 67,755 tonnes, which was on par with first-half 1990's pace.

However, even with an improved demand picture, magnesium prices remained relatively steady, finishing 1990 at $1.43 a pound and remaining pegged at that level throughout most of 1991.

U.S. exports for the first five months of 1991 totaled 26,017 tonnes, compared with a full-year 1990 level of 51,834 tonnes. Metallic and scrap were the primary exports, totaling 20,943 tonnes in the review period and 42,849 tonnes for all of 1990.

Sheet, tubing, ribbons, wire, and powder accounted for 4,386 tonnes of the five-month 1991 export total, and alloys for 688 tonnes.

In January through May 1991, the U.S. also imported 10,708 tonnes of magnesium, comprised of 8,144 tonnes of metallic and scrap, 1,942 tonnes of alloys, and 621 tonnes of sheet, tubing, ribbons, wire, powder and other. This compares with full-1990's 20,214 tonnes of metallic and scrap exports, 5,344 tonnes of alloy exports, and 1,197 tonnes of sheet, tubing, ribbons, wire, and other products.

The U.S. is the leading producer of magnesium, followed by the former USSR and Norway. Resources from which magnesium may be recovered are virtually unlimited and globally widespread. Magnesium-bearing brines are estimated to constitute a resource in the billions of tonnes, and magnesium can be recovered from seawater along world coastlines.

World Production of Magnesium (Primary and Secondary) In Metric Tons[3]

	Primary											Secondary Production			
Year	Brazil	Canada	China	France	Italy	Japan	Norway	USSR	United States	Yugoslavia	World Total[1]	Japan	United Kingdom	United States	USSR
1978	—	9,159	6,600	9,370	10,668	12,304	43,166	77,000	149,463	0	317,755	12,057	3,000	36,228	N.A.
1979	—	9,937	6,600	9,968	9,653	12,531	48,697	79,000	162,464	0	338,850	18,058	3,000	37,222	8,000
1980	—	10,199	7,700	10,282	8,693	10,199	48,890	83,000	169,477	0	348,440	26,314	3,000	40,461	8,000
1981	—	9,370	7,700	8,006	11,900	6,247	52,472	86,000	153,782	4,254	339,731	31,345	2,100	46,256	9,000
1982	331	8,700	7,700	10,593	10,960	6,123	39,598	89,000	102,197	4,697	279,899	23,887	1,940	43,232	9,000
1983	551	6,600	7,700	12,208	8,473	6,643	32,897	91,000	115,431	5,252	286,755	14,343	1,900	46,329	9,000
1984	1,323	8,800	7,700	14,299	8,257	7,830	54,343	94,000	159,207	4,700	360,459	17,258	1,102	48,357	9,000
1985[3]	2,615	7,200	3,000	13,639	7,863	8,456	54,704	87,000	135,728	4,978	325,183	20,894	9	41,298	8,000
1986	4,356	5,100	3,000	13,361	12,417	8,116	56,522	89,000	125,639	4,897	322,408	13,400	1,000	41,807	8,000
1987	5,488	8,800	3,000	13,601	7,626	8,180	56,907	90,000	124,396	5,932	323,930	10,284	1,000	45,165	8,000
1988	5,865	7,600	3,200	13,776	5,436	9,012	50,300	91,000	141,983	6,176	334,348	10,109	1,000	50,207	8,000
1989[2]	6,200	7,200	3,200	14,600	5,469	8,381	49,827	91,000	152,066	6,100	344,043	12,075	1,000	51,200	8,000
1990[1]	8,700	25,300	3,400	14,000	5,400	12,843	48,222	88,000	139,333	6,000	351,198	12,500	1,000	50,262	7,500
1991[1]	9,000	35,000	3,000	14,000	7,000	13,000	40,000	88,000	130,000	5,000	343,000				

[1] Estimate. [2] Preliminary. [3] Data prior to 1985 are for short tons. *Source: Bureau of Mines* T.383

Salient Statistics of Magnesium in the United States In Metric Tons[7]

	Production								Domestic Consumption of Primary Magnesium					
		Secondary							Structural Products					
Year	Primary (Ingot)	New Scrap.	Old Scrap	Total	Exports[2]	Imports for Consumption	Stocks Dec. 31[3]	$ Price per Pound[4]	Castings	Wrought	Total	Alumin. Alloys	Other Uses[5]	Total
1978	149,463	22,135	14,093	36,228	41,807	6,668		.99–1.01	7,651	11,075	18,726	58,798	31,434	108,958
1979	162,464	23,340	13,882	37,222	54,280	4,754		1.01–1.09	7,460	11,562	19,022	60,549	29,273	108,844
1980	169,477	22,907	17,554	40,461	56,761	3,757		1.07–1.25	5,847	11,620	17,467	54,490	23,831	95,788
1981	153,782	22,073	24,183	46,256	34,855	6,897		1.25–1.34	4,951	10,376	15,327	50,518	25,616	91,461
1982	102,197	19,801	23,431	43,232	39,613	4,784		1.34	3,600	10,128	13,728	39,878	20,993	74,599
1983	115,431	21,591	24,738	46,329	46,690	6,350		1.38	3,341	11.435	14,776	46,026	21,174	81,976
1984	159,207	21,594	26,763	48,357	48,337	9,381	39,000	1.43–1.48	4,193	10,246	14,439	48,673	26,775	89,887
1985[7]	135,728	19,579	25,944	41,298	36,680	8,411	39,000	1.48–1.53	4,536	10,840	15,376	31,059	31,317	83,752
1986	125,639	18,813	22,994	41,807	39,909	8,355	39,000	1.53	5,767	7,737	13,504	39,290	26,167	78,961
1987	124,396	21,712	23,452	45,164	44,182	10,851	28,000	1.53	6,285	8,300	14,585	52,172	27,863	94,620
1988[6]	141,983	22,567	27,640	50,207	49,802	14,407	25,000	1.58–1.63	7,069	10,138	17,207	53,671	29,915	100,793
1989[1]	152,066	23,229	27,971	51,200	56,631	12,289	26,000	1.63	7,455	9,653	17,108	53,821	34,297	105,226
1990[1]	139,333	23,456	31,073	54,529	51,834	26,755	26,000	1.43–1.63	9,078	10,944	20,022	45,060	31,026	96,108
1991[1]	130,000				50,000	20,000	22,000	1.43						

[1] Estimate. [2] Metal & alloys in crude form, & scrap. [3] Producer & Consumer Stocks: Primary magnesium. Gov't. agencies continue to hold quantities of primary magnesium. [4] Magnesium ingots (99.8%) f.o.b. Valasco, Texas. [5] Distributive or sacrificial purposes. [6] Preliminary. [7] Data prior to 1985 are for short tons. *Source: Bureau of Mines* T.384

Manganese

The U.S. does not produce any manganese of its own and relies entirely on imports to satisfy its needs. Imports of ferromanganese declined in 1991 from the previous year's pace, mostly as a result of a continuing domestic slowdown in demand for ferromanganese alloyed steel, as smaller producers shifted to other ferroalloys.

For the first eight months of 1991, U.S. imports of manganese ore and dioxide totaled 114,100 tonnes of manganese content, compared with full-year 1990 imports of 300,000 tonnes.

Ferroalloy imports during the January through August period amounted to 290,228 tonnes, against full-year 1990 imports of 440,000 tonnes.

Silicomanganese imports for the first eight months totaled 111,631 tonnes of mineral content, versus full-year 1990 imports of 161,005 tonnes.

Ferromanganese is imported in three categories: low, medium and high-carbon ferromanganese. High-carbon manganese imports for the first eight months of 1991 totaled 165,918 tonnes of mineral content alloy. Total 1990 imports were 328,254 tonnes of mineral content alloy. High-carbon ferromanganese alloy is an essential component in steel production.

Medium-carbon ferromanganese imports in the eight-month 1991 period amounted to 22,052 tonnes, against total 1990 imports of 56,126 tonnes. Low-carbon ferromanganese imports for the first eight months totaled 7,521 tonnes, compared with 1990's 11,114 tonnes.

The U.S. imports most of its high-carbon ferromanganese alloy from South Africa, which has had a strategic materials exemption from the anti-apartheid embargo laws. France and Brazil are other suppliers. Medium-carbon imports come mostly from Germany and Mexico, while low-carbon alloy is almost entirely from France.

U.S. imports of manganese ore totaled 103,818 tonnes for the first eight months of 1991. In 1990, full-year manganese ore imports were 168,954 tonnes of mineral content. Imports of manganese dioxide amounted to 17,136 tonnes for the first eight months of 1991.

Australia is the largest supplier of manganese dioxide to the U.S., followed by Ireland. In the first eight months of 1991, Australia provided 6,393 tonnes of dioxide to the U.S. Manganese ore imports for 1991's first eight months included 124,882 tonnes from Gabon and 30,375 from Australia.

Manganese nodules on the seabeds have captured the attention of international mining firms interested in cost-effective ways to exploit this resource.

World Production of Manganese Ore In Thousands of Short Tons (Gross Weight)

Year	Australia^3 37–53^5	Brazil 30–50	Bulgaria 29	China 30	Gabon 50–53	Ghana 30–50	Hungary^4 30–33	India 10–54	Iran 25–35	Mexico 27–50	Morocco 50–53	South Africa 30–48+	USSR 29–30	Yugoslavia 25–45	World Total
1982	1,238	2,580	50	1,760	1,667	176	91	1,642		561	106	5,750	10,830	30	26,701
1983	1,510	2,306	50	1,760	2,047	191	65	1,412		386	81	3,181	10,890	35	24,147
1984	2,038	2,969	50	1,760	2,336	296	74	1,246	73	525	65	3,361	11,100	23	26,100
1985	2,208	2,781	42	2,900	2,579	351	69	1,367	61	437	48	3,969	10,900	28	27,948
1986	1,818	2,973	41	3,000	2,767	335	69	1,337	37	506	44	4,100	10,300	46	27,523
1987	2,043	2,279	42	2,900	2,649	303	86	1,435	33	425	47	3,188	10,400	46	26,006
1988^1	2,189	2,194	39	3,500	2,485	286	89	1,469	34	489	33	3,807	10,000	44	26,817
1989^2	2,341	2,293	67	3,500	2,858	308	93	1,471	39	435	35	3,994	10,000	44	27,626
1990^2	2,191	2,200	72	3,500	2,700	280	94	1,500	39	447	35	4,048	9,700	43	27,000
1991^2	1,600	2,000		3,500	2,500			1,400		425		3,000	9,400		24,500

[1] Preliminary. [2] Estimated. [3] Metallurgical Ore. [4] Concentrate. [5] Ranges of percentage of manganese. *Source: Bureau of Mines* T.385

Salient Statistics of Manganese in the United States In Thousands of Short Tons (Gross Weight)

Year	Net Import Reliance as a % of Apparent Consumption	Manganese Ore (35% or More Mn)							Ferromanganese				Manganiferous ore^3 Shipments	Price Avg. Value Mn Metallurgical Value ore-$ Lg. ton unit^6	Silicomanganese			
		Consumption by Use																
		Alloys and Metal	Pig Iron Steel	Dry Cells, Misc.	Imports For Consumption	Exports	Consumption	Stocks, Dec. 31^2	Domestic Production	Imports for Consumption	Exports	Consumption			Production	Shipments	Exports^4	Imports^4
1982	99	412.3	83.9	112.6	238	29	609	751	119.0	492.7	10.3	439.2	31.5	1.58	69	83	3.0	62.1
1983	99	274.3	105.5	150.9	368	19	531	617	86	341.6	8.4	446.3	33.5	1.38	N.A.	63	6.4	139.7
1984	98	N.A.	117.0	N.A.	338	238	615	582	N.A.	409.3	6.8	492.2	88.4	1.42	N.A.	N.A.	5.3	138.5
1985	100	262.7	90.0	247.0	387	56	545	589	N.A.	366.9	6.9	466.0	20.0	1.43	N.A.	N.A.	3.1	165.5
1986	100	N.A.	74.0	N.A.	463	42	500	455	N.A.	395.7	4.3	376	14	1.34	N.A.	N.A.	2.0	198.6
1987	100	N.A.	102.0	N.A.	341	63	533	456	N.A.	368	3	409	N.A.	1.27			.7	191.4
1988	100	N.A.	138.0	N.A.	512	68	554	458		531	3	468	N.A.	1.75			7.5	232.2
1989^1	100		135.0		639	57	616	518		476	9	440		2.76			5.9	255.4
1990^5	100				338	77	548	418		419	8	455		3.78				247
1991^5	100				290	30	510	355		335	10	380		3.70				285

[1] Preliminary. [2] Including bonded warehouses; excludes Gov't stocks; also excludes small tonnages of dealers' stocks. [3] 5 to 35% Manganese. [4] Gross Weight. [5] Estimate. [6] 46–48% Mn, C.I.F. U.S. Ports. *Source: Bureau of Mines* T.386

MANGANESE

U.S. Consumption of Manganese by End Uses In Thousands of Short Tons

Year	Appliances & Equipment	Batteries	Cans & Containers	Chemicals	Construction	Machinery	Oil & Gas Indus.	Transportation	Other	Total
1979	59	17	61	59	291	217	70	296	180	1,250
1980	49	17	49	50	243	167	79	214	161	1,029
1981	51	16	46	50	252	171	89	214	138	1,027
1982	30	21	31	29	152	92	40	115	162	672
1983	33	25	28	22	151	90	28	129	162	668
1984	36	34	38	34	170	97	36	139	43	627
1985	32	39	35	22	164	78	34	124	170	698
1986	27	43	31	23	148	65	25	95	273	730
1987	31	43	35	44	165	77	30	105	169	699
1988[1]	19	48	31	46	244	110	21	102	131	752
1989[1]	12	45	23	43	152	83	10	54	375	797

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines; American Metal Market* T.390

Manganese Ore (35% or More Mn) Imported[2] into the U.S. In Thousands of Short Tons (Mn Content)

Year	Bel/Lux.	Zaire	Brazil	Congo (Brazz.)	Canada	Ghana	Panama	Mexico	Morocco	Gabon	Australia	Turkey	South Africa	Total	Value Mill. $
1978	—	13.2	52.1	9.5	—	—	—	18.4	14.5	127.0	32.6	—	11.0	278.2	33.6
1979	—	—	51.7	22.5	—	—	—	2.1	10.7	49.2	55.3	—	52.1	243.6	27.5
1980	—	—	33.6	—	—	—	—	18.6	5.3	79.9	106.0	—	86.4	329.8	46.4
1981	—	—	38.9	—	—	—	—	25.8	13.6	90.6	34.3	—	97.5	300.7	42.6
1982	—	—	3.0	—	1.7	—	—	1.5	5.0	23.2	18.8	—	57.9	111.1	16.2
1983	—	—	39.1	—	—	—	—	25.6	—	85.5	15.1	—	12.7	178.1	19.9
1984	—	—	44.3	—	—	—	—	16.3	—	66.1	21.0	—	17.3	165.0	16.0
1985	—	—	59.8	—	—	—	—	21.8	.1	64.1	43.1	—	—	188.8	22.6
1986	.2	—	38.7	—	—	—	3.2	14.8	.2	119.1	35.5	—	14.0	225.6	23.1
1987	—	—	29.7	—	—	—	—	3.7	.1	88.4	48.7	—	—	170.6	15.2
1988[1]	—	—	27.0	—	—	—	—	35.5	.1	146.7	39.3	—	—	248.6	29.1
1989[3]			93.3					9.8	—	109.6	60.4		21.6	298.5	43.8
1990															

[1] Preliminary. [2] Imported for consumption. [3] Estimate. *Source: Dept of Commerce* T.387

Average Price of Ferromanganese[1] (High Carbon[2]-F.O.B. Plant) In Dollars Per Gross Ton—Carloads

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1976	432½	432½	432½	432½	432½	432½	432½	432½	432½	432½	425	417½	430.63
1977	417½	417½	417½	399½	399½	399½	399½	399½	399½	399½	399½	399½	404.00
1978	399½	399½	399½	399½	422.17	425	425	425	425	425	425	425	416.26
1979	440	440	440	465	490	490	490	490	490	493	510	510	479.04
1980	510	510	510	510	510	510	510	510	510	510	510	510	510.00
1981	510	510	510	510	510	510	510	510	510	510	510	510	510.00
1982	510	510	510	510	510	510	510	510	510	510	510	510	510.00
1983	510	510	510	510	510	510	510	510	510	510	510	510	510.00
1984	510	510	510	510	510	510	510	510	510	——— No Quotes ———			510.00
1987	——— No Quotes ———				326.25	331.88	339.50	345	355	358	363	373	348.95
1988	382.50	382.50	414.50	422.50	435.63	440	457.50	475	530	550	550	550	465.84
1989	550.00	550.50	573.75	597.50	640.00	640.00	640.00	634.00	610.00	610.00	610.00	610.00	605.48
1990	610.00	610.00	610.00	610.00	610.00	610.00	610.00	610.00	610.00	610.00	610.00	610.00	610.00

[1] Domestic standard. [2] Prior to May 1987 prices are for 78% Mn-F.O.B. plant. *Source: American Metal Market.* T.389

Meats

U.S. meat supplies reached record levels in 1991. Increased production and a weak U.S. economy kept a lid on livestock and poultry prices during the year, and producers' returns were expected to decline. In a continuation of a trend in place for several years, beef consumption dropped, while poultry consumption grew. Total red meat consumption expanded in 1991, however, due to a sharp increase in pork demand.

Poultry production increased about 5 percent in 1991. While that represented strong growth, it was below that of the previous year as producers responded to lower net returns. U.S. per capita consumption of poultry was just over 95 pounds in 1991, up from 90.7 pounds in 1990. Exports of both turkeys and broilers reached record levels for the year. Broiler exports to the former Soviet Union were off from the 1990 level, due to credit limitations, but shipments to Japan, Hong Kong, and Mexico all rose sharply.

Red meat production rose by about 2.2 percent in 1991. Pork production grew sharply and reached a record 16.8 billion pounds, consistent with the expansion phase of the hog cycle. Abundant supplies of pork competed with other meats and contributed to lower prices for meats overall. Beef production rose as well, due largely to incentives to market heavier weight cattle. U.S. per capita consumption of red meat rose slightly in 1991 to 120.5 pounds. While beef consumption dropped somewhat for the year, it showed signs of stabilizing and was expected to be about the same in 1992. Per capita pork consumption rose for the year, and was forecast to grow sharply in 1992.

Because of low domestic prices, pork imports were expected to be relatively small in 1991. U.S. exports of pork were slated to be about 6 percent above the 1990 level. Beef and veal imports were expected to be higher in 1991, partly because of relatively high domestic prices. Exports of both beef and veal, meanwhile, were expected to increase.

Pork prices were forecast to drop in 1992, as production continued to expand, while beef prices were expected to be slightly lower. Poultry production was likely to grow again in 1992, but at a lower rate than seen in the past several years. As with red meat, prices for poultry were expected to drop from 1991 levels.

World Total Meat[1] Production In Millions of Metric Tons

Year	Argentina	Australia	China[3]	Canada	Czechoslovakia	Denmark	France	Germany	Japan	Italy	New Zealand	Poland	Brazil	South Africa	United Kingdom	United States	U.S.S.R.
1978	3.5	2.8		1.7	1.3	1.1	3.5	4.1	1.7	2.0	1.1	2.7	3.1	.8	2.2	17.5	13.3
1979	3.5	2.5		1.7	1.3	1.2	3.7	4.2	1.8	2.1	1.1	2.7	3.0	.9	2.2	17.1	13.2
1980	3.3	2.3		1.9	1.3	1.2	3.7	4.3	1.9	2.2	1.1	2.6	3.2	.9	2.3	17.7	12.6
1981	3.4	2.2		1.9	1.3	1.2	3.7	4.3	1.9	2.2	1.2	2.0	3.2	.8	2.3	17.7	12.7
1982	2.7	2.5		1.9	1.2	1.2	3.5	4.2	1.9	2.2	1.1	2.3	3.4	.9	2.2	17.0	12.7
1983	2.5	2.1	13.2	1.9	1.3	1.3	3.5	4.2	1.9	2.3	1.2	2.2	3.4	.8	2.4	17.8	13.6
1984	2.7	2.0	14.4	1.9	1.3	1.3	3.7	4.4	2.0	2.4	1.1	2.1	2.9	.9	2.4	17.8	14.0
1985	2.8	2.2	17.0	1.9	1.3	1.3	3.6	4.4	2.1	2.3	1.2	2.3	3.0	.9	2.4	17.9	14.1
1986	2.9	2.3	19.2	2.0	1.3	1.4	1.6	4.6	2.1	2.4	1.1	2.6	2.8	.8	2.3	17.8	14.6
1987	2.8	2.4	19.9	2.1	1.3	1.4	3.6	4.6	2.1	2.4	1.2	2.6	3.5	.8	2.4	17.5	15.5
1988	2.7	2.4	21.9	2.2	1.4	1.4	3.5	4.5	2.1	2.5	1.2	2.7	3.6	.7	2.3	18.1	16.2
1989[2]	2.7	2.4	23.3	2.2	1.5	1.4	3.7	4.3	2.1	2.5	1.2	2.6	4.5	.8	2.3	18.0	16.5

[1] Production of beef & veal, mutton & lamb, goat meat, & pork. Horsemeat included from 1976. [2] Preliminary. [3] Predominately pork production. *Source: Foreign Agricultural Service, U.S.D.A.* T.395

Production and Consumption of Red Meats in the United States (*Carcass Weight*)

Year	Beef			Veal			Lamb & Mutton			Pork (Excluding Lard)			All Meats		
	Comm. Production	Consumption Total	Consumption Per Capita Lb.[3]	Comm. Production	Consumption Total	Consumption Per Capita Lb.[3]	Comm. Production	Consumption Total	Consumption Per Capita Lb.[3]	Comm. Production	Consumption Total	Consumption Per Capita Lb.[3]	Production	Consumption Total	Consumption Per Capita Lb.[3]
	Mil. Lbs.	Mil. Lbs.		Mil. Lbs.	Mil. Lbs.		Mil. Lbs.	Mil. Lbs.		Mil. Lbs.	Mil. Lbs.		Mil. Lbs.	Mil. Lbs.	
1979	21,262	23,522	105.5	411	450	2.0	282	332	1.5	15,270	15,353	68.8	37,225	39,657	177.8
1980	21,469	23,320	103.4	379	410	1.8	310	345	1.5	16,431	16,574	73.5	38,590	40,648	180.2
1981	22,214	23,756	104.3	415	438	1.9	327	360	1.6	15,719	15,927	69.9	38,675	40,481	177.8
1982	22,366	23,998	104.3	423	457	1.99	356	381	1.65	14,121	14,425	62.6	37,266	39,261	170.5
1983	23,060	24,710	106.2	428	457	1.97	367	388	1.67	15,117	15,369	66.1	38,972	40,924	175.9
1984	23,418	24,900	106.1	479	503	2.14	371	398	1.70	14,720	15,396	65.6	38,988	41,197	175.5
1985	23,557	25,342	106.9	499	527	2.22	352	386	1.63	14,728	15,651	66.0	39,136	41,903	176.8
1986	24,213	25,935	107.4	509	550	2.3	331	375	1.6	13,998	15,008	62.1	39,051	41,868	173.3
1987	23,405	25,205	103.3	416	449	1.8	309	360	1.5	14,312	15,237	62.5	38,442	41,251	169.1
1988	23,424	25,252	102.5	387	412	1.7	329	387	1.6	15,623	16,559	67.2	39,763	42,610	173.0
1989	22,974	24,326	97.8	344	356	1.4	341	406	1.6	15,759	16,569	66.6	39,418	41,657	167.4
1990[1]	22,634	24,031	96.1	316	331	1.3	358	419	1.7	15,300	16,030	64.1	38,608	40,805	163.2
1991[2]	22,809	24,075	95.4	295	312	1.2	358	422	1.7	15,964	16,432	65.1	39,426	41,235	163.3

[1] Preliminary. [2] Estimate. [3] Carcass weight. *Source: Economic Research Service, U.S.D.A.* T.400

Total Red Meat Imports (Carcass Weight Equivalent[2]) of Importing Countries In Thous. of Metric Tons

Year	Belgium & Lux.	Canada	Czechoslovakia	France	Rep. of Korea	Germany	Greece	Hong Kong	Italy	Israel	Japan	Netherlands	Spain	Switzerland	Un. Kingdom	United States	USSR
1977	121.2	194.3	21.4	556.2		627.0	110.9		612.9	30	649.0	175.3	59.2	26.0	1,280	1,100	496.2
1978	143.9	172.9	21.0	630.4		633.0	142.0		632.1	37	665.4	187.5	112.3	33.8	1,276	1,296	132.0
1979	99	140	21	541	108	648	140		684	71	610	149	124	25	1,245	1,348	469
1980	91	111	21	590	15	700	134		722	33	486	168	27	23	1,122	1,210	706
1981	88	110	21	579	45	687	80		690	55	612	146	16	31	1,072	1,058	786
1982	79	112	29	618	82	692	157	68	824	56	546	119	28	25	1,137	1,175	679
1983	107	121	25	676	78	728	216	82	832	46	599	108	26	27	1,072	1,212	779
1984	79	130	15	711	39	796	194	238	823	43	636	105	36	21	1,015	1,280	691
1985	79	132	15	760	19	843	208	296	948	47	647	116	36	15	955	1,476	587
1986	77	130	15	841	14	837	221	300	961	42	712	104	92	16	1,007	1,506	537
1987	78	157	15	829	16	880	246	281	952	41	869	109	90	20	1,036	1,602	495
1988	76	170	15	869	45	940	232	313	906	44	994	132	93	18	1,081	1,630	353
1989[1]	81	175	25	908	111	952	239	292	974	38	1,150	119	127	14	1,033	1,421	355

[1] Preliminary. [2] Excludes fat, offals & live animals. *Source: Foreign Agricultural Service, U.S.D.A.* T.397

Total Red Meat Exports (Carcass Weight Equivalent[2]) of Principal Countries In Thousands of Metric Tons

Year	Argentina	Australia	Brazil	Canada	China	Denmark	France	Ireland	Romania	Netherlands	N. Zealand	Poland	United States	Un. Kingdom	USSR	Uruguay	Yugoslavia
1977	669.6	1,335	240.0	112.1		695.6	312.2	363.8		697.2	790.9	131.8	236.0	185	49.2	134.6	88.0
1978	823.7	1,377	178.1	117.1		753.4	267.2	359.3		751.6	724.7	141.0	256.6	177	38.0	118.8	113.4
1979	728	1,306	111	133		832	306	342		785	783	155	211	179	33	84	82
1980	487	1,087	170	182		857	362	453	208	843	796	141	195	228	35	128	98
1981	508	966	281	207		905	415	324	245	932	817	60	240	243	53	185	72
1982	546	1,184	361	247	230	909	401	311	160	879	846	52	213	194	32	182	107
1983	438	947	404	242	264	945	387	341	185	957	938	93	225	296	25	236	83
1984	266	747	483	280	273	952	489	301	177	1,066	815	68	227	344	27	142	98
1985	272	860	540	313	278	958	503	370	265	1,158	876	13	210	284	30	131	97
1986	261	1,031	355	376	222	1,007	649	473	280	1,216	863	122	279	306	14	198	55
1987	294	1,122	304	394	238	986	604	496	310	1,265	922	128	327	313	14	104	58
1988	327	1,102	567	405	227	1,005	630	431	305	1,309	901	131	402	270	13	142	61
1989[1]	369	1,069	304	407	261	990	586	478	320	1,357	908	140	606	301	11	177	85

[1] Preliminary. [2] Excludes fat, offals & live animals. *Source: Foreign Agricultural Service, U.S.D.A.* T.398

United States Meat Exports by Type of Product In Metric Tons

Year	Beef and Veal		Lamb & mutton, fresh or frozen	Pork					Sausage, bologna, & frankfurters	Variety meats, fresh chilled & frozen[1]	Other meats[2]	Total
							Other Pork Prepared or Preserved					
	Fresh, chilled & frozen	Prepared & Preserved		Fresh, chilled & frozen	Hams & shoulders, cured	Bacon	Not canned	Canned				
1977			1,755	116,282	2,941	1,216	2,919	1,810	3,426			
1978	40,390	14,878	1,375	84,120	3,934	1,655	7,524	2,932	3,653	181,164	67,549	409,174
1979	45,908	11,495	562	83,058	3,380	912	8,912	1,123	3,003	164,125	64,631	387,109
1980	48,255	11,248	595	69,966	3,327	820	8,438	1,667	3,296	195,182	69,532	412,326
1981	62,371	12,297	972	86,652	2,363	1,079	9,130	1,662	3,819	206,891	56,102	443,338
1982	71,621	14,046	676	58,541	1,358	774	7,514	1,289	3,404	222,688	48,924	530,835
1983	80,976	12,070	632	62,141	1,794	601	5,581	695	3,139	213,155	35,311	416,095
1984	99,208	12,322	878	46,098	1,474	621	3,837	513	2,603	213,180	34,432	415,166
1985	99,923	9,605	460	34,394	1,175	450	4,066	638	2,908	239,451	37,712	430,782
1986	173,884	10,519	558	20,969	650	474	4,796	349	3,214	241,051	46,130	502,594
1987	200,180	10,789	668	29,145	1,227	617	3,597	376	4,582	222,342	61,206	534,729
1988	214,530	14,083	619	54,598	2,138	1,045	4,924	268	8,439	302,087	74,160	676,891
1989[3]	373,110	8,810	2,076	79,318	6,101	3,788	2,204	1,395	11,968	245,235	75,381	809,386

[1] Edible animal organs. [2] Includes sausage ingredients, cured (excluding canned); meat and meat products canned (n.e.s.); and baby food, canned. [3] Preliminary. *Source: Foreign Agricultural Service. Compiled from reports of the U.S. Department of Commerce* T.399

U.S. Imports of Meats and Meat Preparations In Thousands of Metric Tons[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	127	106	160	169	167	215	158	234	246	194	124	114	2,015
1983	208	177	170	178	187	176	189	181	171	169	123	104	2,030
1984	180	167	171	198	161	128	209	198	189	226	175	159	2,160
1985[2]	88	81	94	97	97	100	104	105	103	90	89	91	1,139
1986	102	89	89	81	82	97	118	105	105	101	108	76	1,154
1987	96	99	107	109	101	122	126	111	113	111	87	71	1,250
1988	132	108	127	112	104	125	99	114	91	88	89	74	1,263
1989[1]	114	86	96	91	98	94	91	95	74	87	89	93	1,110

[1] Preliminary. [2] Data Prior to 1985 are in *millions of pounds*. *Source: Dept. of Commerce* T.401

United States Meat Imports by Type of Product In Metric Tons

	Beef and Veal			Lamb,	Pork						Variety	
Year	Fresh or frozen[1]	Canned, including sausage	Other prepared or preserved[2]	Mutton, & goat, except canned	Fresh and frozen	Canned[3]	Other prepared or preserved[2]	Sausage, all types[4]	Mixed sausage	Other meats n.s.p.f.[5]	meats, fresh or frozen	Total
1982	607,184	37,747	17,402	8,649	125,282	96,831	1,547	2,372	2,242	4,408	2,823	906,487
1983	565,997	59,073	16,766	8,752	121,707	125,593	2,300	2,176	1,911	3,606	3,935	911,814
1984	516,960	57,863	19,864	8,693	207,703	142,423	3,372	2,243	2,121	5,088	5,707	972,037
1985	594,476	64,277	18,314	15,565	254,538	160,802	6,312	2,192	2,672	5,305	5,622	1,130,075
1986	637,718	45,779	20,778	16,596	263,488	151,730	8,221	2,640	2,849	4,621	6,475	1,160,895
1987	671,152	56,653	17,450	17,204	302,392	145,464	9,387	2,688	4,222	4,126	9,590	1,240,328
1988	703,414	66,919	10,367	19,239	282,728	139,847	10,214	2,906	2,732	3,977	8,905	1,251,249
1989[6]	638,999	68,710	1,434	20,917	135,922	197,518	21,253	2,656	2,620	20,013	11,102	1,121,144

[1] Includes prepared items. [2] Includes pickled and cured. [3] Includes canned hams, shoulders, and bacon. [4] Includes fresh and cured sausages. [5] Mostly mixed luncheon meats. [6] Preliminary. *Source: Foreign Agricultural Service. Compiled from reports of the U.S. Department of Commerce.* T.402

U.S. Exports of Meat and Meat Preparations In Thousands of Metric Tons[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	129	147	124	131	167	147	111	108	112	133	143	115	1,566
1983	114	104	136	133	115	118	121	99	130	127	134	119	1,449
1984	112	104	134	106	114	103	128	119	123	139	121	119	1,422
1985[2]	54	50	54	51	53	53	59	63	54	63	55	56	663
1986	56	56	56	60	63	55	57	67	72	85	77	78	781
1987	68	60	68	71	80	76	80	81	82	80	87	82	915
1988	72	69	75	81	87	90	93	105	99	102	103	105	1,081
1989[1]	84	91	108	105	110	119	116	117	101	121	122	109	1,301

[1] Preliminary. [2] Data prior to 1985 are in *millions of pounds*. *Source: Dept. of Commerce* T.403

Average Wholesale Prices of Meats In Cents Per Pound

	Composite Retail Price										
Year	of Beef Grade 3 (Choice)	of Pork[3]	Net Farm Value of Pork[5]	Cow Beef Canner & Cutter Midwest	Boxed Beef[7] Cut-out Choice, 1–3 550–700 lbs. Centr. U.S.	Fresh Beef, Steer Carcasses Choice, E. Coast	Lamb Carcasses Choice & Prime (55-65 Lb.) East Coast	Pork[6] Loins (14–18 lbs) Midwest	Hams Skinned, Smoked 14-17 Lb. Midwest	Pork[1] Bellies 12-14 lbs. Midwest	Live Broilers Georgia
1982	242.5	175.4	88.0		101.31	101.3	122.15	111.51	111.98	78.19	25.0
1983	238.1	169.8	76.5	78.48	97.83	97.8	125.86	115.91	75.60	60.58	27.0
1984	239.6	162.0	77.4	74.70	98.01	100.1	131.89	115.81	78.22	60.08	32.0
1985	228.6	162.0	71.4	74.13	90.76	91.3	145.93	113.59	67.50	59.50	28.0
1986	226.8	178.4	82.4	71.31	88.98	89.0	139.89	104.78	80.01	65.82	32.5
1987	238.4	188.4	82.7	85.26	103.84	97.2	150.41	126.51	80.96	63.11	26.5
1988	250.3	183.4	69.4	87.77	110.50	103.1	139.50	97.48	71.03	41.25	31.5
1989	265.7	182.9	70.4	94.43	114.78	107.8	131.35	121.31	69.39	34.14	35.0
1990[2]	289.9	223.1	82.5	102.41	123.21		121.51	117.52	87.70	53.80	31.0
1991[4]	288.3	211.9	78.4	106.11	118.30		117.33	117.23	74.98	47.79	29.5

[1] Prior to 1983 prices are for cured pork cuts, picnics at N.Y. (4-8 lb). [2] Preliminary. [3] Sold as retail cuts (ham, bacon, loin, etc.). [4] Estimate. [5] Gross farm value minus by-product allowance. [6] Prior to 1988 prices are for pork, fresh loins (8–14 lbs.) N.Y. [7] Prior to 1987 prices are for choice steer beef carcass (600–700 lbs.). *Sources: Bureau of Labor Statistics; Department of Agriculture* T.404

Average Wholesale Price of Boxed Beef Cut-Out[1], Choice, at Central Markets In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	97.40	101.20	103.80	109.50	115.10	111.20	102.60	100.80	95.50	93.00	92.90	92.62	101.30
1983	93.90	96.55	100.62	107.76	105.00	102.47	97.72	95.01	92.10	91.24	91.57	99.82	97.83
1984	105.74	102.86	105.14	103.50	99.62	98.54	101.26	97.61	94.37	92.38	99.08	101.22	100.11
1985	99.50	97.42	92.00	89.20	89.52	88.48	82.22	80.02	81.14	91.11	99.68	98.84	90.76
1986	92.26	86.82	85.04	83.34	86.42	83.58	89.25	90.98	90.50	91.80	95.70	92.04	88.98
1987	89.70	91.69	92.86	100.56	107.80	105.71	99.29	95.45	96.87	96.80	95.34	94.50	97.21
1988	97.15	99.50	103.47	105.25	111.70	106.38	97.09	101.04	103.15	104.36	104.75	106.20	103.34
1989[2]	107.30	107.98	112.43	113.84	112.62	106.35	113.17[2]	112.83	110.08	110.04	115.06[2]	119.52	—
1990	121.75	120.97	122.10	123.62	124.56	121.53	118.54	121.52	121.18	124.96	128.32	129.48	123.21
1991	125.04	123.24	125.45	125.96	123.76	120.61	115.82	111.54	110.61	113.04	113.43	111.18	118.30

[1] 1–3; 550–700 lb. [2] Data prior to July 1989 are for steer beef carcass, 500–600 pounds at midwest markets. *Source: Economic Research Service, U.S.D.A.* T.405

Production[2] (Commercial Slaughter) of All Meats[1] in the U.S. In Millions of Pounds—Carcass Weight

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	3,152	2,894	3,296		9,097			9,165			9,659		37,266
1983	3,151	2,787	3,269	3,051	3,163	3,299	3,002	3,440	3,435	3,523	3,472	3,383	38,974
1984	3,219	3,092	3,349	3,079	3,411	3,205	3,045	3,362	3,111	3,672	3,324	3,119	38,987
1985	3,421	2,938	3,162	3,295	3,488	3,085	3,277	3,402	3,252	3,544	3,123	3,145	39,131
1986	3,482	2,942	3,133	3,477	3,388	3,156	3,281	3,180	3,259	3,506	2,986	3,261	39,050
1987	3,411	2,875	3,197	3,160	2,975	3,103	3,158	3,135	3,331	3,521	3,197	3,378	38,442
1988	3,245	3,071	3,356	3,158	3,206	3,318	3,171	3,507	3,462	3,511	3,399	3,358	39,763
1989	3,265	3,003	3,326	3,130	3,396	3,342	3,047	3,482	3,317	3,524	3,411	3,171	39,418
1990[3]	3,350	2,973	3,257	3,047	3,320	3,174	3,095	3,428	3,093	3,493	3,275	3,080	38,606
1991[3]	3,427	2,954	3,083	3,285	3,291	3,060	3,252	3,426	3,307	3,708			

[1] Except for pork production & lard. [2] Represents the total dressed carcass weight of livestock slaughtered under Federal inspection, exclusive of meats from condemned animals. [3] Preliminary. *Source: Agricultural Marketing Service, U.S.D.A.* T.406

Cold Storage Holdings of All[1] Meats in the United States, at End of Month In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	553.4	524.2	536.0	—	—	503.9	—	—	473.9	—	—	553.8
1983	573.4	571.0	576.3	607.6	619.2	595.5	569.8	543.3	535.3	576.7	667.6	679.3
1984	692.9	707.7	738.1	777.5	818.9	776.3	713.8	627.6	646.2	674.9	681.4	696.0
1985	735.0	702.9	721.2	772.7	784.9	758.6	738.2	677.1	654.2	645.2	633.0	607.4
1986	616.8	615.3	622.5	658.2	667.2	638.8	618.6	572.0	541.1	572.4	564.3	566.2
1987	597.6	599.0	598.2	590.8	560.2	498.7	515.6	495.9	523.0	575.6	613.8	622.9
1988	664.6	689.5	716.6	759.4	721.2	670.7	670.7	633.9	644.3	664.0	701.5	716.4
1989	745.0	758.7	747.5	747.5	763.7	683.5	652.0	576.3	557.0	538.2	554.2	536.0
1990[2]	564.7	609.6	637.5	653.0	632.8	591.6	565.9	507.4	507.5	536.7	536.7	536.4
1991[2]	566.2	588.6	606.2	597.7	640.1	614.1	589.7	593.2	558.8	594.7	627.2	644.9

[1] Includes beef and veal, mutton and lamb, pork and products, rendered pork fat, and miscellaneous meats. Excludes lard. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.407

Cold Storage Holdings of Frozen Beef[1] in the United States In Millions of Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1982	256.7	249.1	223.3	211.9	—	—	189.7	—	—	247.7	—	—
1983	294.4	303.1	307.0	299.1	277.3	265.2	254.0	252.3	267.4	268.2	278.0	316.0
1984	325.0	338.0	332.5	325.7	324.6	312.8	303.2	301.7	290.0	319.6	326.0	340.1
1985	357.7	375.1	347.0	334.0	328.0	300.9	292.5	319.7	310.6	308.4	294.9	302.3
1986	317.4	318.4	302.3	297.1	301.2	318.5	321.6	337.0	319.4	291.6	292.3	297.5
1987	310.6	320.6	306.0	311.1	312.3	280.1	252.7	278.7	269.3	286.5	307.6	304.3
1988	288.6	316.4	325.4	313.2	305.0	275.1	248.4	269.6	294.9	307.6	296.5	300.4
1989[2]	317.5	315.1	313.4	298.9	275.4	244.1	241.8	249.2	242.4	231.8	220.7	237.6
1990[2]	251.7	260.8	268.6	308.3	293.3	272.0	257.5	266.4	240.5	243.0	267.4	278.1
1991[2]	307.2	302.2	272.6	276.9	265.5	234.7	247.1	273.2	259.4	276.7	298.2	304.9

[1] Includes frozen beef, cured beef, and beef in process of cure. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.408

Mercury

Mercury's use in the U.S. and throughout the world continues to wane, despite the metal's unique properties, such as liquidity at ordinary temperatures, high specific gravity and electrical conductivity. An environmental hazard, mercury usage will continue to decline, although certainly not disappear.

Substitutes for mercury are available, and more are expected to be developed, cutting further into mercury's use. Owing to the persistent slippage in world demand, and despite the relatively small number of places in the world where primary mercury is found, prices have been in a downtrend for the past decade. Mercury's record price of $700 a flask was set in 1965, basis New York. In the 1980s, the high neared $450, and the low was about $200. In 1990 the average price was $262, and values trended steadily lower during 1991 from a monthly average high of $181.55 in January to under $100 by October.

Less than a dozen countries produce primary mercury and two, the USSR and Spain, account for more than 60 percent of world output. In the U.S., only one mine produced mercury, the McDermitt in Nevada, and it was closed in late 1990. The world's largest mine is in Spain. In 1985, Spain's mercury production totaled 2,757 tonnes, and by 1990 output was down to about 1,500 tonnes.

Annual Soviet output hovered around 2,200 tonnes in the second half of the 1980s, but production there is uncertain, owing to the country's economic transition. Algeria, China and Mexico have a combined annual output of less than 2,000 tonnes. Total world production is now under 6,000 tonnes a year, versus a productive capacity of almost 10,000 tonnes. Mercury is also recovered from scrapped mercury-containing products and from government-held stockpiles.

Foreign trade in mercury is small. The U.S. imported more than 600 tonnes in the mid-1980s, and by 1990 imports were down to 15 tonnes. The U.S. also exported 311 tonnes in 1990, a third of which went to the Netherlands. Brazil imports mercury, some of which is used in the Amazon River Basin as an amalgam in gold production. The runoff has polluted the river and its tributaries, and the Brazilian government is trying to curb mercury use.

Almost all industrial applications for mercury are falling. Mercury's use in batteries, once the major source of demand, has dropped dramatically. Efforts are under way to eliminate its use in batteries, which in the U.S. totaled 750 tonnes in the mid-1980s and was down to about 100 tonnes in the early 1990s. Japan has pushed to curtail mercury use in batteries; as of the early 1990s, official policy applied only to batteries made for internal consumption. Mercury's use in paints has dried up and has fallen 90 percent in the U.S. in the past few years and is probably headed to zero, owing to the Environmental Protection Agency's ban on mercury-containing antifungal compounds in latex paints.

What lies ahead for mercury in the 1990s is a steady erosion in demand and the likelihood that prices will remain under pressure.

World Mine Production of Mercury In Flasks of 34.5 Kilograms (76 lbs.)[1 tonne = 29.008216 flasks]

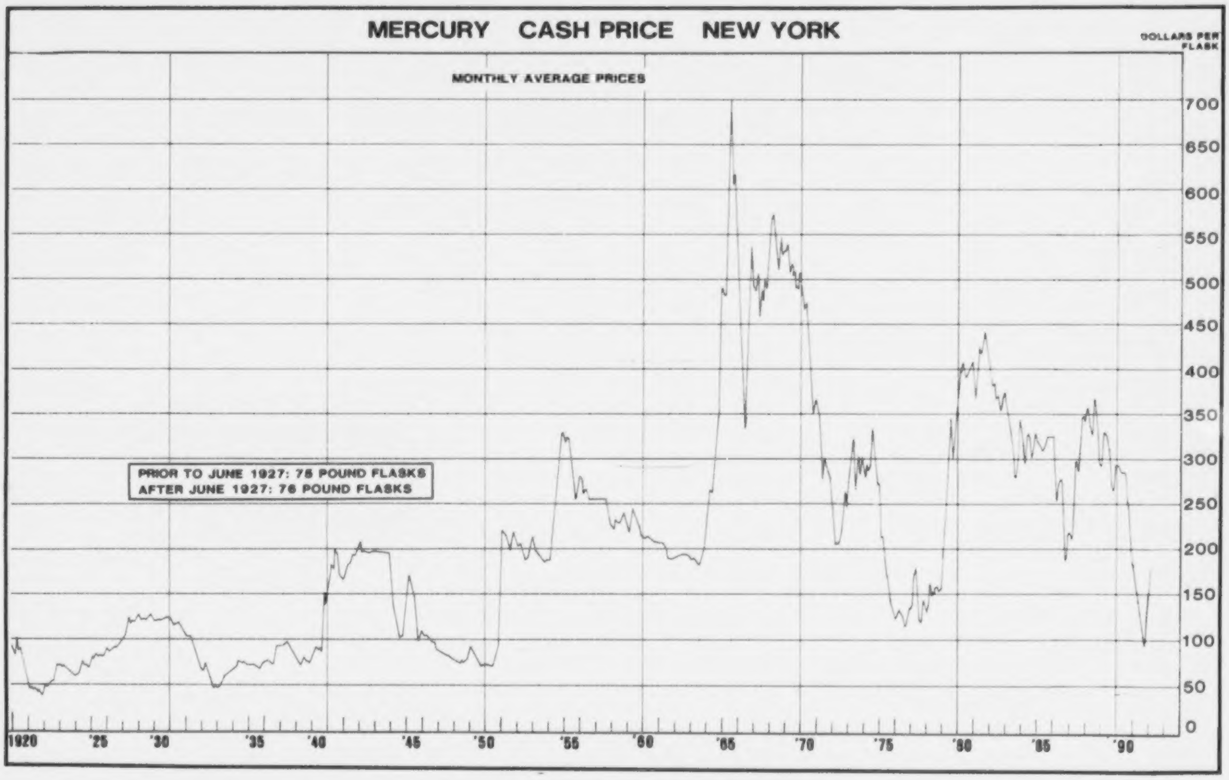
Year	Algeria	China[1]	Czechoslovakia	Dom. Rep.	Finland	Italy	Mexico	Spain	Turkey	United States	USSR[1]	W. Germany	Yugoslavia	World Total
1985	794	700	158	1	125	—	394	873	233	570	2,200	—	88	6,136
1986	756	700	168	—	146	—	104	2,757	291	N.A.	2,250	—	75	7,247
1987	705	700	164	—	144	—	124	1,395	211	N.A.	2,300	—	67	5,810
1988[2]	700	700	168	—	130	—	345	1,380	97	N.A.	2,300	—	70	5,890
1989[1]	700	700	165	—	125	—	300	1,380	100	N.A.	2,300	—	70	5,840
1990[1]	600					—	345	1,500	130	N.A.	2,100			5,785
1991[1]	600						300	1,400	100		2,100			5,500

[1] Estimate. [2] Preliminary. *Source: Bureau of Mines* T.409

Salient Statistics of Mercury in the United States In Flasks (76 Pounds Each)

Year	Net Import Reliance as a % of Apparent Consumption	Production			N.D.S.[4] Shipments (Primary)	Stocks, Dec. 31			Exports	U.S. Imports (For Consumption) From:						
			Secondary													
		Mine	Industrial	D.O.E.[2] Shipments		Producers (Mine)	Consumers & Dealers	Total		Total	Algeria	Canada	Turkey	China	Spain	Japan
1985	57	570	185	20	156	669	296	965	N.A.	651						
1986	50	N.A.	219	106	16	N.A.	234	N.A.	N.A.	696						
1987	N.A.	N.A.	265	117	128	N.A.	320	N.A.	N.A.	636	—	5	—	406	172	34
1988[1]	N.A.	N.A.	278	214	52	N.A.	338	N.A.	N.A.	329	31	5	3	131	147	—
1989[3]	N.A.	N.A.	137	180	170		217		221	131	—	—	—	—	127	—
1990[3]	N.A.	N.A.	75	170	36		286		311	15						
1991[3]			50		30		800		300	4						

[1] Preliminary. [2] Dept. of Energy. [3] Estimate. [4] National Defense Stockpile. *Source: Bureau of Mines* T.412



Average Price of Mercury in New York In Dollars Per Flask of 76 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	405.00	380.92	390.76	384.32	365.88	367.50	364.29	343.30	352.55	373.21	373.75	374.29	372.98
1983	366.67	346.18	338.91	327.62	316.31	300.23	282.25	279.02	299.05	339.29	344.50	331.69	322.64
1984	318.67	295.68	300.45	324.26	328.27	325.48	314.64	302.09	317.18	329.07	327.13	320.08	316.92
1985	317.30	315.00	314.38	309.34	297.27	309.05	316.74	324.61	325.00	325.00	325.00	325.00	316.98
1986	285.68	261.97	252.44	272.05	277.50	276.07	260.00	218.10	181.91	193.80	215.19	219.43	242.85
1987	216.70	211.03	223.73	260.00	297.63	297.73	286.82	306.55	337.86	345.91	348.95	342.27	289.60
1988	354.00	357.00	350.00	337.14	326.90	352.28	367.13	360.43	349.29	322.74	299.34	293.45	339.14
1989	292.50	318.42	330.00	327.50	315.68	308.86	293.03	273.80	265.13	267.61	282.50	292.50	297.29
1990	292.50	292.50	287.84	285.00	285.00	285.00	281.45	262.50	259.34	235.54	198.75	182.50	262.33
1991	181.55	169.08	150.36	140.68	129.77	119.75	110.36	102.50	98.00	94.02	127.50	150.12	131.14

Source: American Metal Market T.410

Mercury Consumed in the United States In Metric Tons[3]

Year	Batteries	Chlorine & Caustic Soda	Catalysts Misc.	Dental Equip.	Electrical Lighting	General Lab. Use	Measuring Control Instrum.	Other Instruments + Relat.	Paints	Wiring Devices & Switches	Other Uses	Grand Total
1982	24,880	6,243	499	1,019	826	281	3,064	194	6,794	2,004	984	48,943
1983	23,350	8,054	484	1,597	1,273	280	2,465	N.A.	6,047	2,316	1,356	49,138
1984	29,700	7,347	359	1,432	1,487	269	2,856	N.A.	4,651	2,730	1,404	54,669
1985[3]	952	235	61	50	40	14	79	N.A.	169	95	20	1,718
1986	750	259	90	52	41	20	63	N.A.	179	103	31	1,588
1987	533	311	59	56	45	20	59	N.A.	198	131	34	1,446
1988	448	445	86	53	31	26	77	N.A.	197	176	55	1,593
1989	250	381	40	39	31	18	87	N.A.	192	141	35	1,214
1990[1]	106	247	33	44	33	32	108	N.A.	22	70	25	720
1991[2]												400

[1] Preliminary. [2] Estimate. [3] Data prior to 1985 are in flasks. *Source: Bureau of Mines* T.413

Milk

Milk production in 1990 rose nearly 3 percent to 148.3 billion pounds. In the third quarter of 1991, milk output ran about 1 percent less than in the same quarter of 1990. Milk production for January-September 1991 was slightly higher than in the like period of 1990. Despite fewer milk cows, production has been moving higher because of more output per animal. Milk yield per cow during the first nine months of 1991 averaged 1,255 pounds a month. For the comparable period of 1990, output averaged 1,214 pounds.

Higher yields came in spite of the fact that the milk-feed price ratio over the first three quarters of 1991 averaged less than in 1990. This should have discouraged producers from increasing feeding rates. Preliminary data for the 1990 season showed that the amount of grain and concentrates fed per cow reached a record level of almost 6,400 pounds on a yearly basis, 9 percent higher than in 1989. During 1990, milk output per cow reached over 14,640 pounds, almost 3 percent more than in 1989.

Milk prices in 1991 averaged below 1990 levels, which could signal reduced rates of concentrate feeding and a decline in milk output in early 1992. Pasture conditions and the quality of forage in 1991 were still recovering from the devastating drought of 1988. Alfalfa hay production managed to rise 3 percent from a year earlier, and prices were lower. On a historical basis, hay prices remained high.

While milk yields have been rising, the size of the dairy herd has been on the decline. In the third quarter of 1991, the U.S. dairy herd averaged 9.97 million animals, compared with the third quarter of 1990 when the herd averaged 10.12 million. In recent years, government programs have provided incentives to producers to reduce or eliminate their herds; this appears to have been effective in stemming the increase in the number of dairy cows. As recently as 1985, there were almost 11 million cows. The herd has declined by close to 10 percent over five years. While the size of the herd has fallen, there has been a steady increase in milk yield. In 1985, milk output per cow was 13,000 pounds, rising to 15,000 pounds in 1990.

According to the USDA, dairy producers entered 1992 with financial prospects similar to a year earlier. Income prospects were not bright because of low milk prices. Over the first nine months of 1991, the price of milk sold to manufacturing plants averaged 17 percent less than in 1990. While prices in the second half of 1991 were rising, it was not enough to offset the early-season declines. Given the low prices, dairy farmers were not likely to expand their operations very much. Milk prices in 1991 have followed the seasonal pattern of low prices in the summer, followed by higher prices in the fall and winter.

In the export market, a major issue was whether U.S. dairy products would be included in food aid for the Soviet Commonwealth. If so, butter from huge U.S. stocks was a likely candidate. Over the first six months of 1991, U.S. dairy product exports totaled 490 million pounds on a milk equivalent basis, down sharply from a year earlier. U.S. imports of dairy products over the same period were 1.14 billion pounds. Under the Dairy Export Incentive Program, export sales in 1991 reached 25,000 tonnes on a product-weight basis, with most of that sold to Algeria.

World Fluid Milk Production (Cow's Milk) In Millions of Metric Tons

Year	Australia	Brazil	Canada	Czechoslovakia	Denmark	Finland	Germany	USSR	India	Netherlands	New Zealand	France	Poland	Switzerland	United Kingdom	United States
1986	6.2	11.6	7.9	7.0	5.1	3.1	26.4	102.2	19.5	12.7	8.2	28.1	15.7	3.8	16.2	65.0
1987	6.4	13.3	8.0	6.9	4.9	2.9	24.4	103.4	21.2	11.8	7.2	27.1	15.5	3.8	15.4	64.7
1988	6.3	13.2	8.2	7.0	4.7	2.7	24.0	106.8	22.0	11.4	7.9	26.0	15.5	3.8	14.9	65.8
1989	6.5	13.4	8.0	7.1	4.7	2.7	24.2	108.5	24.0	11.3	7.4	26.2	16.4	3.9	14.6	65.4
1990[1]	6.4	14.2	7.9	7.0	4.7	2.7	23.8	108.7	26.7	11.2	7.8	26.4	16.2	3.9	15.0	67.3
1991[2]	6.4	15.0	7.8	7.0	4.6	2.5	30.5	109.0	27.8	11.2	7.9	26.0	15.5	3.8	15.1	68.1

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.414

U.S. Milk-Feed Price Ratio[1] In Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	1.48	1.50	1.48	1.48	1.46	1.45	1.51	1.55	1.61	1.75	1.77	1.77	1.57
1987	1.73	1.69	1.63	1.61	1.57	1.57	1.56	1.58	1.64	1.65	1.65	1.63	1.63
1988	1.51	1.47	1.43	1.40	1.37	1.36	1.15	1.19	1.28	1.32	1.36	1.38	1.34
1989	1.38	1.35	1.30	1.29	1.27	1.29	1.37	1.43	1.52	1.63	1.71	1.76	1.44
1990	1.69	1.55	1.47	1.48	1.49	1.52	1.56	1.58	1.57	1.46	1.41	1.57	1.52
1991[2]	———	1.49	———	———	1.47	———	———	1.59	———	———	1.77	———	1.58

[1] Pounds of 16% protein mixed dairyfeed equal in value to one pound of milk. [2] Preliminary. *Source: National Agricultural Service, U.S.D.A.*
T.420

MILK

Milk Cows & Cattle and Milk Production in the U.S.

Year	Number of Milk Cows on Farms[2] (Thousands)	Production Per Milk Cow[3]		Total Milk Production[3]			Milk Sold to Plants & Dealers		Milk Sold Directly to Consumers		Milk Utilized Bill. Lbs.	Farm Value of All Milk Produced Mill. $	Exports Mill. Lbs.	Imports Mill Lbs.	Per Capita Consump. Fluid Milk in Lbs.
		Milk Pounds	Milk Fat Pounds	Quantity Billion Pounds	% of Fat in All Milk Produced	Milk Fat Mil. Lbs.	Quantity Billion Pounds	$ Per 100 Lbs.	Quantity Million Quarts	¢ Per Quart					
1986	10,773	13,285	487	143.1	3.67	5,249	139.8	12.51	546.7	48.3	141.0	18,025	1,970	2,732	240
1987	10,327	13,819	505	142.7	3.65	5,213	139.1	12.54	556.9	48.6	140.5	18,014	2,434	2,490	237
1988	10,262	14,145	520	145.2	3.67	5,333	141.7	12.26	527.6	50.0	142.9	17,920	1,533	2,394	233
1989[1]	10,126	14,244	525	144.3	3.68	5,315	141.1	13.56	497.3	53.9	142.1	19,694	3,496	2,498	230
1990[4]	10,127	14,642		148.3										2,600	
1991[4]	10,011	14,835		148.5											

[1] Preliminary. [2] Average number on farms during year excluding heifers not yet fresh. [3] Excludes milk sucked by calves & milk produced by cows not on farms. [4] Estimate. *Source: Crop Reporting Board, U.S.D.A.* T.415

Utilization of Milk in the United States In Millions of Pounds (Milk Equivalent)

Year	Butter from Whey Cream	Creamery Butter[1]	Cheese[6]	Cottage Cheese (Creamed)	Condensed Whole Milk	Evaporated Milk[5]	Dry Whole Milk Products	Ice Cream & Other	Frozen Dairy Products[2]	Fluid Consumption		Fed to Calves	Other Mfg. Products[4]
										Nonfarm	Farm[5]		
1985	3,694	24,385	41,700	917	817	1,509	877	15,021	12,855	52,014	709	1,745	477
1986	3,799	23,274	42,239	914	835	1,278	901	15,451	13,226	52,636	677	1,714	559
1987	3,894	21,072	42,851	884	891	1,272	1,067	15,697	13,456	53,429	659	1,599	452
1988	4,017	23,099	44,111	857	812	1,285	1,263	15,115	12,960	54,411	623	1,620	388
1989[3]	3,961	24,525	43,548	704	643	1,144	1,286	14,600	12,531	55,304	579	1,519	

[1] Excludes whey butter. [2] From milk and cream only. [3] Preliminary. [4] Includes dry cream, malted milk, dry part skim milk, dry ice cream mix. [5] Used for farm-churned butter. [6] American & other. *Source: Crop Reporting Board, U.S.D.A.* T.416

Milk Production on Farms in the United States In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	11,276	10,485	11,874	12,028	12,869	12,506	12,553	12,342	11,790	11,986	11,520	11,918	143,147
1986	12,211	11,276	12,565	12,517	13,127	12,509	12,272	11,899	11,288	11,360	10,963	11,393	143,381
1987	11,668	10,896	12,257	12,222	12,897	12,328	12,227	11,920	11,432	11,704	11,298	11,860	142,709
1988	11,998	11,550	12,582	12,426	12,974	12,440	12,321	11,985	11,614	11,811	11,436	12,015	145,152
1989	12,296	11,412	12,733	12,582	12,973	12,147	11,981	11,838	11,338	11,657	11,380	11,902	144,239
1990[1]	12,274	11,486	12,980	12,744	13,255	12,627	12,576	12,324	11,732	12,088	11,821	12,377	148,284
1991[1]	12,601	11,756	13,113	12,881	13,261	12,488	12,372	12,187	11,727	12,090	11,738	12,307	148,522

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.417

Average Price Received by U.S. Farmers for All Milk[2] (Sold to Plants) In Dollars Per Cwt.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1985	13.90	13.70	13.30	12.90	12.50	12.20	12.10	12.10	12.30	12.60	12.60	12.60	12.76
1986	12.50	12.40	12.20	12.10	12.00	11.90	12.00	12.30	12.80	13.20	13.40	13.40	12.51
1987	13.20	12.90	12.50	12.20	11.90	11.90	12.00	12.20	12.60	12.90	12.90	12.70	12.54
1988	12.50	12.20	11.90	11.60	11.40	11.30	11.40	11.80	12.50	13.00	13.40	13.60	12.26
1989	13.50	13.20	12.70	12.40	12.30	12.40	12.60	13.20	14.00	14.80	15.60	16.00	13.56
1990	15.50	14.50	13.90	13.40	13.50	13.80	14.00	14.20	13.90	13.10	12.70	11.70	13.73
1991[3]	11.70	11.70	11.40	11.30	11.40	11.40	11.80	12.30	12.80	13.40	13.80	13.80	12.24

[1] Weighted average. [2] Adjusted for seasonal variation. [3] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.418

Farm Price of Milk[1] Eligible for Fluid Market In Dollars Per Hundred Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	14.10	13.90	13.50	13.00	12.70	12.30	12.30	12.30	12.40	12.70	12.70	12.70	12.90
1986	12.70	12.60	12.40	12.20	12.10	12.00	12.10	12.40	12.90	13.30	13.50	13.50	12.62
1987	13.30	13.00	12.70	12.40	12.10	12.00	12.20	12.40	12.80	13.00	13.00	12.80	12.66
1988	12.70	12.40	12.10	11.70	11.50	11.40	11.50	12.00	12.60	13.10	13.50	13.70	12.36
1989	13.60	13.40	12.90	12.50	12.40	12.50	12.70	13.30	14.10	14.90	15.60	16.10	13.66
1990	15.60	14.70	14.00	13.40	13.60	13.90	14.10	14.30	14.00	13.30	12.90	11.80	13.89
1991[2]	11.80	11.70	11.50	11.40	11.40	11.50	11.90	12.40	12.80	13.50	13.70	13.90	12.31

[1] MILK, Standard Grade, 3.5% milkfat. Weighted average price per 100 pounds (f.o.b. city). [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.419

Molasses

U.S. supplies of molasses (including production and imports) have amounted to about 3 million tonnes a year, about one-third of which comes from domestic beet output and nearly another third from mainland and Hawaiian cane. Beet molasses is used as a livestock feed and as a yeast by the pharmaceutical industry.

Imports account for about 900 million tonnes annually, down from 1.5 to 2 million in the mid-to-late 1970s. Suppliers to the U.S. include Mexico, Guatemala, the Dominican Republic, Poland and Australia. The U.S. also exports about 150,000 to 200,000 tonnes of molasses a year.

According to the USDA, an estimated 2.1 million tonnes of inedible molasses were fed to U.S. livestock in 1991, slightly below the 2.16 million in 1990, but above levels in the late 1980s.

Prices of cane molasses in New Orleans began 1991 at $67.50 a ton and fell slightly in the fall, ending the year at $65.00. That compared with an average price in New Orleans of $61.70 in 1990 and $55.63 in 1989.

Leading foreign producers include Brazil, Mexico, India, China, and the former USSR.

World Production of Molasses (Industrial) In Thousands of Metric Tons

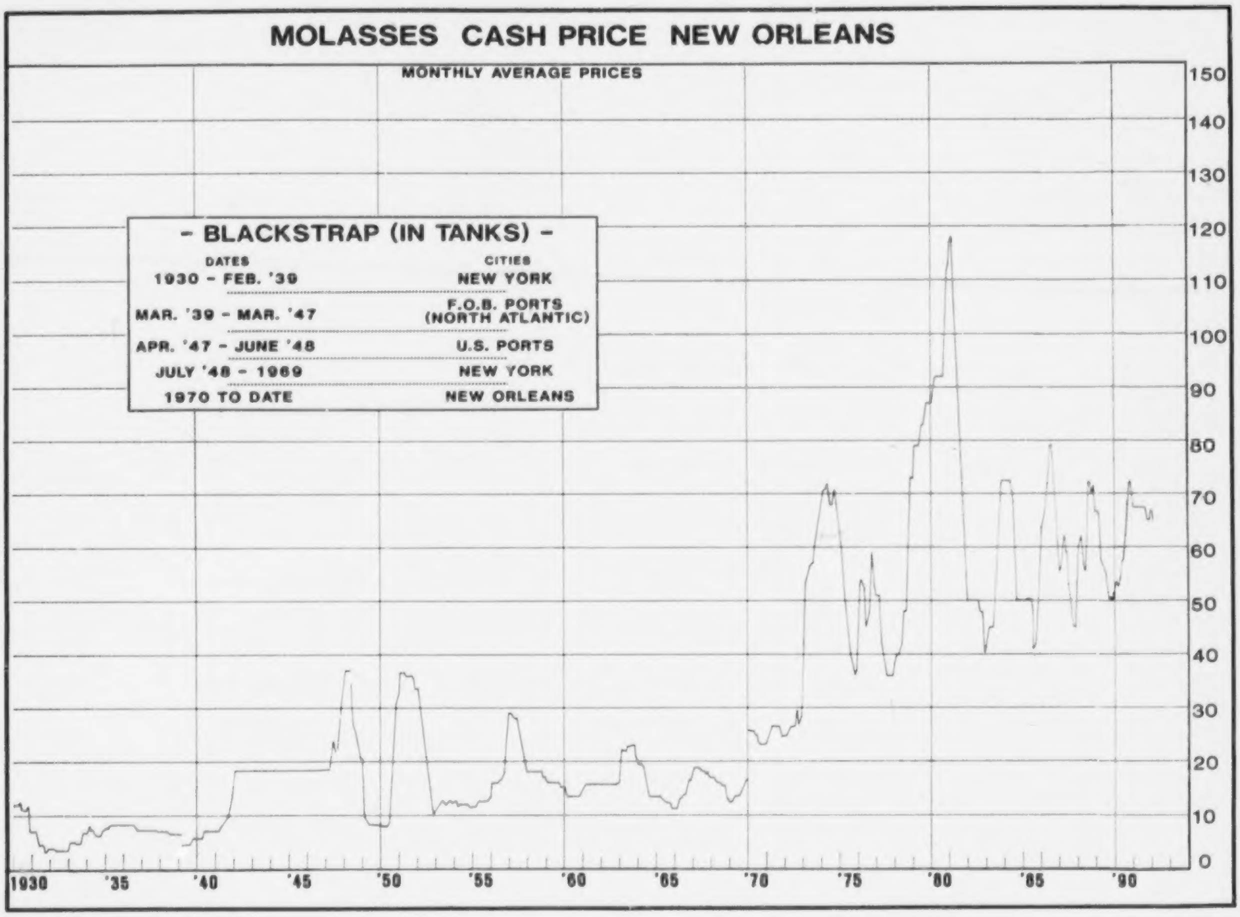
Crop Year	Argentina	Brazil	Cuba[2]	France	W. Germany	India	Italy	Mexico	Philippines	Poland	Australia	Thailand	China	United States	USSR	World Total
1978–9	818	5,000	1,296	952	685	2,564	365	1,410	818	657	577			2,148	3,306	32,688
1979–0	789	4,800	1,185	958	653	1,582	390	1,260	818	653	598			2,054	3,062	30,052
1980–1	654	5,400	1,111	1,013	657	2,129	410	1,145	860	430	713			2,012	2,669	30,941
1981–2	565	4,520	1,200	1,404	836	3,400	500	1,373	941	665	719	1,736		2,051	2,385	34,384
1982–3	541	5,110	1,050	1,364	807	3,700	370	1,270	957	758	726	1,316		1,900	2,530	35,139
1983–4	560	5,130	1,150	1,072	605	2,500	380	1,390	928	816	718	1,230	1,275	2,015	2,723	32,981
1984–5	702	4,800	1,150	1,165	640	2,500	380	1,400	744	708	736	1,356	1,130	2,012	3,200	33,755
1985–6	854	3,986	2,000	1,126	751	2,850	486	1,608	551	636	658	1,194	1,909	1,848	2,900	33,852
1986–7	950	2,587	1,750	998	715	3,660	530	1,552	490	638	693	1,206	1,875	2,027	2,950	33,429
1987–8	880	4,000	1,750	1,050	600	3,800	539	1,560	490	635	730	1,215	1,870	2,056	2,850	34,866
1988–9[1]	850	4,000	1,750	1,000	600	3,500	490	1,560	490	635	740	1,275	1,875	2,010	2,950	34,717
1990–91[3]	800	3,500	1,200	1,150	700	3,750	450	1,500	450	650	700	1,000	1,700	2,100	3,000	36,500

[1] Preliminary. [2] Includes hi-test molasses. [3] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.421

U.S. Annual Average Prices of Molasses, by Types (F.O.B. Tank Car or Truck) In Dollars Per Short Ton[1]

	Blackstrap						Beet Molasses			Citrus Molasses
Year	New Orleans	South Florida	Baltimore	Minneapolis	Omaha	Calif. Ports	Colorado	Wyo. & Montana	No. Dak. & Minn.	Florida
1977	40.55	42.45	47.00	54.35	58.75	42.90	41.45	45.20	55.10	50.65
1978	51.50	52.40	59.25	67.30	72.55	54.00	60.40	58.35	60.95	61.05
1979	82.95	85.50	91.20	107.90	107.75	84.05	85.30	82.65	N.A.	79.40
1980	96.50	96.80	106.75	124.45	128.85	101.70	95.60	96.55	N.A.	103.65
1981	84.90	90.00	99.30	111.20	119.40	89.20	85.30	95.20	N.A.	103.10
1982	48.00	56.55	64.15	70.85	81.90	60.50	69.40	63.70	44.50	86.90
1983	56.50	63.10	73.05	76.90	91.90	70.40	79.45	65.95	60.55	89.20
1984	61.50	71.00	77.65	81.00	94.45	71.95	82.50	79.15	70.65	97.50
1985	50.28	59.79	64.66	72.83	85.00	61.89	N.A.	67.50	57.33	N.A.
1986	69.61	78.10	83.05	92.03	N.A.	73.26	80.33	86.75	68.44	N.A.
1987	53.23	61.96	72.83	80.05	N.A.	67.17	60.31	54.69	62.22	N.A.
1988	64.89	74.54	82.93	90.07	N.A.	74.61	72.95	69.94	55.71	N.A.
1989[2]	55.63	65.31	75.15	81.12	N.A.	70.36	79.94	74.50	55.00	N.A.
Jan. '90	67.50	75.00	90.00	94.75	N.A.	80.00	80.00	75.00	55.00	N.A.
Feb.	67.50	75.00	90.00	94.75	N.A.	80.00	80.00	75.00	55.00	N.A.
Mar.	67.50	75.00	90.00	94.75	N.A.	80.00	80.00	75.00	55.00	N.A.
Apr.	67.50	75.00	90.00	94.75	N.A.	80.00	80.00	75.00	55.00	N.A.

[1] Per ton prices are based on 171 gallons for blackstrap, beet and corn molasses and on 175 gallons for citrus molasses. Prices represent sales F.O.B. terminal to the general feed trade and do not include sales made under various pricing arrangements above or below prices generally available to the ultimate user. Ton—2,000 lbs. Gallon—U.S. gallon. Prices are now rounded off to the nearest 5 cents. [2] Preliminary. *Source: Molasses Market News, Annual Summary, AMS, U.S.D.A. Denver Colorado, and Molasses Market News, Weekly, various issues* T.423



MOLASSES CASH PRICE NEW ORLEANS

Salient Statistics of Molasses in the United States In Thousands of Metric Tons

Year	Mainland cane	Domestic beet	Refiners blackstrap	Total[2]	In shipments from Hawaii	Imports Edible & Inedible	Imports from Brazil	Imports from Domin. Repub.	Imports from Mexico	Exports	Total U.S. supply
1984	633	908	184	1,759	266	1,370	54	155	94	140	3,255
1985	697	879	136	1,712	236	1,644	203	99	161	196	3,396
1986	731	1,025	127	1,884	274	123	309	137	97	330	3,058
1987	726	1,137	111	1,975	152	962	95	124	184	367	2,722
1988	775	1,006	106	1,883	178	987	143	103	94	299	2,750
1989[1]	760	966	123	1,849	169	930	107	147	76	294	2,652

[1] Preliminary. [2] Starting 1984 totals are adjusted to reflect omission of citrus and hydrol production. *Source: Molasses Market News, AMS, USDA.*

Wholesale Price of Blackstrap Molasses (Cane) at New Orleans In Dollars Per Ton

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	72.50	72.50	72.50	72.50	70.70	68.75	59.00	50.00	50.00	50.00	50.00	50.10	61.55
1985	50.00	50.00	50.00	50.00	50.00	47.75	41.00	41.90	48.00	53.75	57.50	63.50	50.28
1986	65.00	65.60	68.50	71.00	73.75	79.00	79.13	76.60	72.30	68.10	60.25	55.50	69.56
1987	56.25	59.40	62.00	59.40	59.10	53.00	50.60	48.60	45.30	45.00	47.00	53.10	53.23
1988	60.30	62.00	60.60	56.90	55.50	62.50	72.50	72.50	70.00	71.50	67.50	66.90	64.89
1989	66.90	66.25	57.50	56.90	55.75	55.60	55.00	51.25	50.00	50.50	50.00	51.25	55.58
1990	52.75	53.10	52.50	54.25	57.20	57.50	62.75	68.75	70.60	72.25	71.25	67.50	61.70
1991	67.50	67.50	67.50	67.50	67.50	67.50	67.50	67.50	65.25	65.00			

Source: Economics Service, U.S.D.A. T.424

Molybdenum

High copper prices were the key determinant of molybdenum values in 1991. Because copper spent much of the year above $1.00 a pound, primary molybdenum producers were forced to cut their output to avoid flooding the market with excess product. Depending on the price of copper, as much as 50 percent of the West's molybdenum availability is obtained as a byproduct of copper mining.

For the first five months of 1991, U.S. molybdenum concentrate production amounted to 25,765 tonnes, compared with full-year 1990's 61,611 tonnes. Shipments broke down into 17,710 tonnes for domestic users and 8,381 for export for the five months, against full-year 1990 shipments of 40,335 tonnes for domestic use and 21,245 for export.

U.S. output of molybdenum products totaled 14,101 tonnes in January to May 1991, versus all of 1990's 28,764 tonnes. In 1990, molybdenum used to make other products, including molybdic oxides, metal powder, ammonium molybdate, and sodium molybdate, totaled 13,038 tonnes, and for the first five months of 1991 the total was 5,393 tonnes.

In the first four months of 1991, the U.S. exported 13.17 million kilograms of molybdenum ore and concentrate to seventeen nations. The Netherlands was the largest customer for U.S. molybdenum concentrates, receiving 3.5 million kilograms in the period, followed by Belgium with 3 million kilograms In 1990, the largest market for U.S. ore and concentrate was the United Kingdom, which took 10.9 million kilograms of ore.

U.S. exports of ferromolybdenum in January-April 1991 totaled 135,000 kilograms to seven nations. The largest customer was Japan, which received 79,500 kilograms, followed by Canada.

For the first four months of 1991, the U.S. imported 1.4 million kilograms of gross-weight molybdenum products, containing 638,000 kilograms of the metal. This compares with 1990's full-year total of 4.5 million kilograms of gross-weight product, containing 1.7 million kilograms of molybdenum.

In March of 1991, Molycorp, one the nation's largest miners and refiners of molybdenum and a subsidiary of Unocal Corp., began operation of a 20 million pound molybdenum roaster. The facility's annual rate of production of molybdenum oxide is about 18 million pounds. At the same time, Molycorp put up for sale its Questa mine, which was responsible for 10 million pounds a year of molybdenum production.

World Mine Production of Molybdenum In 1,000 Pounds (Contained Molybdenum)

Year	Bulgaria	Canada[3]	Chile	China	Iran	Mexico	Mongolia	Niger	Peru	Philippines	South Korea	United States	USSR	World Total
1981	330	28,329	33,863	4,400		994	1,460	249	5,485	207	1,023	139,900	23,600	240,003
1982	375	30,779	44,198	4,400		11,442	1,830	93	6,427	150	796	84,381	24,300	209,385
1983	420	22,474	33,651	4,400		12,932	2,120	88	5,825	86	313	33,593	24,500	140,616
1984	420	25,479	37,172	4,400	1,100	8,938	2,200	73	6,557	—	348	103,664	24,700	214,275
1985	420	17,311	40,541	4,400	1,100	8,292	2,200	44	8,393	—	734	108,409	24,900	216,959
1986	420	24,804	36,555	4,400	1,100	7,386	2,425	44	7,681	—	697	93,976	25,100	203,588
1987	440	32,564	37,349	4,400	1,100	9,700	2,425	18	7,392	—	717	75,117	25,300	196,522
1988[1]	440	29,840	34,231	4,400	1,100	9,824	2,425	33	5,388	—	317	94,911	25,300	208,209
1989[2]	420	30,102	36,500	4,400	1,100	9,900	2,650	33	6,800	—	330	139,123	25,300	256,658
1990[2]	397	29,720	30,490	4,409	1,000	8,818			6,614			135,828	24,251	246,148
1991	441	29,762	30,423	4,409		8,818			6,614			132,276	24,251	242,726

[1] Preliminary. [2] Estimate. [3] Shipments. *Source: Bureau of Mines* T.425

U.S. Salient Statistics of Molybdenum In 1,000 Pounds (Contained Molybdenum)

	Concentrate							Primary Products[3]							
		Shipments						Net Production				Shipments			
Year	Production	Total (Includes Exports)	Value Mill. $	For Exports	Consumption	Imports for Consumption	Stocks Dec. 31[2]	Grand Total	Molybdic Oxide[4]	Molybdenum Metal Powder	Price Avg Value $ Kilogram	To Domestic Destinations	Oxide For Exports	Consumption	Producers' Stocks Dec. 31
1980	150,686	149,311	1,344	35,026	108,206	1,825	18,101	106,284	84,554	4,904		95,391	35,557	53,265	27,007
1981	139,900	118,916	945.5	32,735	80,725	1,988	35,043	105,824	59,645	3,513		64,368	20,004	50,189	44,961
1982	84,381	76,135	504.1	21,870	49,444	3,115	38,510	65,381	35,354	3,304		47,884	23,375	27,665	49,402
1983	33,593	48,805	166.6	18,979	27,014	1,673	11,637	37,533	11,148	3,667		50,562	19,877	27,225	28,352
1984	103,664	102,405	326.8	41,687	54,843	28	12,450	79,689	40,186	4,302		65,527	24,553	34,792	22,155
1985	108,409	111,936	347.8	38,646	N.A.	112	9,322	87,436	48,750	3,734		73,861	36,268	33,451	21,014
1986	93,976	95,006	240.5	18,267	53,061	1,120	8,715	41,490	6,147	4,256	6.44	57,855	21,325	31,898	20,699
1987	75,117	69,868	179.3	18,587	37,442	1,264	15,082	34,659	N.A.	4,181	7.28	40,668	12,273	32,629	22,168
1988	94,911	99,738	266.9	26,294	78,684	169	10,433	56,540	6,214	4,378	7.61	45,273		38,406	15,688
1989[1]	139,123	136,097	421.4		92,324	—	12,931	61,696	4,486	N.A.	8.05	40,293		37,928	14,716
1990[5]	135,828				103,200		13,037		6,802		7.39	40,231		40,196	16,545
1991[5]	132,276						9,424				7.39	26,901		63,601	18,729

[1] Preliminary. [2] At mines & at plants making molybdenum products. [3] Comprises ferromolybdenum, molybdic oxide, & molybdenum salts & metal. [4] Includes molybdic oxide briquets, molybdic acid, & molybdenum trioxide. [5] Estimate. *Source: Bureau of Mines* T.426

Nickel

Nickel prices resumed a lower trend in 1991, as the world supply situation moved from an estimated 7,000-tonne deficit in 1990 to 1991's 22,000-tonne surplus. Slack demand from the steel and electroplating industries, as well as increased availability from what was formerly the USSR, kept the pressure on prices throughout most of 1991.

The outlook for 1992 was about the same, as stainless steel demand, nickel's main end use at around 60 percent of total consumption, continued to reflect recessionary forces in the U.S. and abroad. The Soviet Commonwealth was expected to ship more than 110,000 tonnes of nickel to the West, in an effort to pick up needed hard currency. In 1990, it was estimated that the Soviets shipped about 85,000 tonnes, which was still well above their usual exports of 30,000 to 40,000 tonnes in prior years.

The U.S. relies entirely upon imports to satisfy its nickel needs, as the last domestic mine was closed in 1986. Imports for consumption for the first eight months (January-August) of 1991 totaled 99,214 tonnes, compared with the same 1990 period's 94,942 tonnes. Cathodes, pellets and briquets comprised the largest segment of imports, totaling 73,848 tonnes in the 8-month period, against 70,599 tonnes in 1990's first eight months. Imports of ferronickel used in special alloy steelmaking processes amounted to 10,249 tonnes in 1991's 8-month review period, versus 10,514 tonnes in the year-earlier period.

Canada was the largest supplier of nickel to the U.S. in 1991, sending 51,955 tonnes across the border in the first eight months. For all of 1990, Canada shipped 177,220 tonnes of ore to the U.S. Norway was the second major supplier with 18,120 tonnes in the review period, compared with 43,344 tonnes for all of 1990.

Domestic nickel consumption in the first nine months of 1991 totaled 63,926 tonnes, against the same 1990 period's use of 64,842 tonnes. Consumption of cathodes, pellets, briquets, and powder totaled 50,321 tonnes in the period, versus 50,515 in the same 1990 period. Ferronickel consumption was 7,508 tonnes, compared with 1990's January-September total of 11,212 tonnes.

The U.S. exports finished nickel products, and in the first eight months of 1991 nickel exports totaled 18,469 tonnes, against 1990's same-period shipments of 12,014 tonnes. Italy and Japan were the largest U.S. customers, with exports to Italy totaling 6,073 tonnes and to Japan 5,108 tonnes, making nickel another U.S. raw material export to Japan.

Futures Market

Nickel futures are traded on the London Metal Exchange.

World Mine Production of Nickel In Thousands of Short Tons of Contained Nickel

Year	Australia[3]	Botswana	Brazil	Canada	Cuba	Domin. Repub.	Finland[3]	Greece	Indonesia	New Caledonia	Philippines	South Africa	United States	USSR	Zimbabwe	World Trade
1984	67.9	20.5	25.9	192.0	35.1	26.4	7.6	18.4	52.5	64.3	15.0	27.6	14.5	192.0	13.4	846.9
1985	76.9	29.0	18.2	187.4	35.4	28.0	9.4	24.3	44.5	79.8	31.0	27.6	6.1	204.0	12.3	895.7
1986	75.1	28.2	23.3	180.4	35.5	24.1	13.1	15.9	59.2	68.1	14.1	34.2	1.2	285.0	4.1	939.3
1987	74.0	28.6	22.2	208.4	37.3	35.8	11.6	10.1	63.7	62.7	8.6	37.8	—	300.0	6.9	983.9
1988	79.4	28.6	23.0	240.9	46.0	32.3	12.9	15.6	63.9	74.6	11.9	38.4	—	310.0	8.3	1,018.8
1989[1]	79.2	26.1	23.1	215.6	49.3	35.3	11.6	20.0	69.4	109.0	14.2	39.1	—	310.0	8.8	1,066.7
1990[2]	77.0	27.6	23.0	222.5	42.3	36.0	11.6	20.0	64.0	97.0	13.2	40.0	.4	285.0	8.3	1,030.0
1991[2]	80.0	30.0	25.0	225.0	40.0	36.0	12.0	20.0	65.0	100.0	14.0	40.0	8.4	285.0	9.0	1,050.0

[1] Preliminary. [2] Estimate. [3] Content of nickel sulfate and concentrates. *Source: Bureau of Mines* T.427

Salient Statistics of Nickel in the United States In Short Tons

Year	Net Import Reliance as a % of Apparent Consumption	Production		Nickel Consumed[1], By Uses (contained nickel)								Consumption (Apparent)	Stocks, Dec. 31		Nickel & Pdt's (nickel content)		Avg. N.Y. Cathode Price Free Mkt. $ Lb.
		Plant[4]	Secondary[3]	Alloy Steels	Cast Irons	Copper Base Alloys	Electroplating Anodes	Nickel Alloys	Stainless & Heat Resisting Steels	Super Alloys	Chemicals		At Consumers' Plants	At Producer Plants	Imports	Exports	
1983	75	33,400	49,852	9.8	1.1	6.3	22.6	24.9	47.0	11.5	2.0	201,000	20,448	38,500	152,333	43,913	2.20
1984	69	44,933	55,167	11.9	1.5	6.7	24.8	29.4	45.8	12.9	2.2	210,600	20,934	37,300	176,715	43,904	2.22
1985	71	36,382	53,645	9.6	3.1	14.9	24.9	25.3	68.0	13.6	2.1	196,995	19,106	17,400	157,690	35,245	2.26
1986	73	1,651	43,726	8.2	2.6	10.6	21.0	19.9	60.2	12.7	1.9	170,534	16,557	10,300	129,094	15,217	1.86
1987	79	—	35,639	9.0	1.8	11.2	22.7	19.2	79.1	18.3	1.9	184,250	10,478	6,824	148,273	15,333	2.19
1988	73	—	45,237	8.1	2.6	7.6	21.5	21.0	88.3	14.9	2.0	175,436	12,110	7,672	154,366	20,972	6.25
1989[2]	69	382	43,855	6.7	2.6	10.9	24.2	21.5	76.8	12.1	1.3	162,102	9,749	6,819	130,725	24,173	6.05
1990[5]	72	4,080	37,165	7.4	1.4	7.8	15.5	19.1	75.8	17.4	1.3	170,000	12,000	5,643	144,530	24,000	4.02
1991[5]	74	8,100		4.5	.2		13.2		4.5	11.3				5,500	160,000		3.80

[1] Exclusive of scrap. [2] Preliminary. [3] From purchased scrap (ferrous & nonferrous). [4] Smelter & refinery. [5] Estimate. *Source: Bureau of Mines* T.428

Oats

U.S. production of oats in 1991/92 was forecast by USDA to be 243 million bushels, a decline of 32 percent from the previous season. A large area from the eastern Corn Belt to the central Plains had hot, dry weather, hurting average oat yields, which fell to 50.6 bushels per acre from 60.1 bushels in 1990/91. The major producing states were the Dakotas, Wisconsin, Minnesota and Iowa.

Acreage planted to oats in 1991/92 fell sharply to 8.6 million from 10.4 million acres the year before. Planted area was the lowest since record-keeping began in 1929. In an effort to encourage more plantings, the USDA eliminated the acreage reduction requirement for oats from a previous 5 percent. Some oats acreage was still idled under another USDA program and under the agency's long-term Conservation Reserve Program. One reason that fewer oats are being grown in the U.S. is that other crops are more profitable. Oats had been cultivated mainly for on-farm feeding to work animals, which have declined in number in the last three decades.

Domestic harvested acreage of oats in 1991 was only 5 million, down from 5.9 million in 1990 and the lowest since records in that category began in 1866.

Beginning stocks of oats in 1991/92 were 171 million bushels, up from 157 million the previous season. Imports were forecast at 65 million bushels, against 71 million the year before, and came from Canada, Finland, and Sweden. Total domestic supplies were put at 479 million bushels, down 18 percent from the previous year and the smallest since 1988/89.

Most of the domestic oats crop is consumed as feed. Total feed use in 1991/92 was estimated at 245 million bushels, 17 percent less than a year earlier. Use of oats for food, seed, and industrial purposes was forecast to rise slightly to 125 million bushels from 120 million. Consumer demand for oat products has risen since the mid-1980s, and though the purported health benefits of oats have been questioned, oat bran and breakfast cereals continue to be popular.

U.S. ending stocks of oats in 1991/92 were projected to fall to 108 million bushels, some 37 percent less than the previous season.

U.S. Farm Program

The target price for oats was $1.45 a bushel in 1991 and 1992. The loan rate was 83 cents in 1991 and 88 cents in 1992. There was no acreage reduction requirement for oats in 1991 or 1992. Oats producers had more flexibility in planting and were able to shift acreage to the most profitable crop.

Futures Markets

Oat futures and options are traded on the Chicago Board of Trade.

World Production of Oats In Thousands of Metric Tons

Crop Year	Argentina	Australia	Canada	China	Denmark	France	Netherlands	Poland	Spain	Sweden	Turkey	United States	USSR	Un. King.	West Germany	World Total
1978–9	676	1,763	3,621	1,500	206	2,203	140	2,492	553	1,550	370	8,730	18,507	706	4,049	51,753
1979–0	522	1,411	2,978	1,600	163	1,845	109	2,186	456	1,524	370	7,643	15,200	542	3,697	45,165
1980–1	433	1,128	3,028	1,800	160	1,927	94	2,245	680	1,567	355	6,652	15,544	601	3,249	44,543
1981–2	339	1,617	3,188	1,700	176	1,774	115	2,731	445	1,816	325	7,391	15,000	620	3,200	45,343
1982–3	637	848	3,637	1,660	178	1,802	136	2,608	443	1,663	330	8,602	15,500	575	3,777	47,866
1983–4	593	2,296	2,773	1,650	86	1,374	61	2,377	464	1,268	310	6,923	17,000	465	2,489	45,115
1984–5	610	1,367	2,670	780	150	1,892	58	2,604	780	1,904	300	6,875	19,200	516	2,973	48,391
1985–6	400	1,339	2,997	664	152	1,803	58	2,682	719	1,668	314	7,559	20,500	615	3,278	50,062
1986–7	400	1,600	3,300	700	111	1,000	40	2,500	422	1,500	300	5,582	21,900	505	2,700	47,500
1987–8	700	1,700	3,000	600	93	1,000	47	2,400	502	1,400	310	5,429	18,500	440	2,400	43,700
1988–9[1]	500	1,900	3,000	700	130	1,000	27	2,200	580	1,300	300	3,177	15,300	685	2,400	37,500
1989–90	600	1,600	3,500	700		1,000		2,200		1,500		5,423	16,800		2,000	41,400
1990–1[2]	400	1,500	2,900	700		900		2,100		1,600		5,201	18,000		2,400	42,200
1991–2[2]	500	1,500	1,900	700		800		1,900		1,400		3,500	14,500		1,900	34,300

[1] Preliminary. [2] Estimated. *Source: Foreign Agricultural Service, U.S.D.A.* T.434

United States Official Oat Crop Production Reports In Thousands of Bushels

Year	July 1	Aug. 1	Sept. 1	Oct. 1	Dec.	Final	Year	July 1	Aug. 1	Sept. 1	Oct. 1	Dec.	Final
1982	580,288	591,478	599,008	—	616,981	592,630	1987	—	392,843	—	—	—	373,713
1983	519,002	504,201	472,541	—	477,303	476,471	1988	—	206,330	206,330	210,766	—	217,600
1984	454,747	455,190	472,460	—	471,921	473,661	1989	387,593	380,690	380,690	370,693	—	373,587
1985	498,953	519,028	537,443	—	518,626	518,490	1990	374,457	365,337	365,337	358,288	—	357,524
1986	—	443,183	413,025	—	383,553	384,996	1991	280,016	259,666	259,666	242,526	—	

Source: Crop Reporting Board, U.S.D.A. T.431

OATS

Oats Stocks in the United States as of June 1 In Thousands of Bushels

Year	On Farms	Off Farms	Total All Positions	Year	On Farms	Off Farms	Total All Positions
1987	103,300	29,446	132,746	1990	82,850	74,062	156,912
1988	76,900	35,129	112,029	1991[1]	92,400	78,831	171,231
1989	59,930	38,404	98,334				

[1] Preliminary. *Source: Agricultural Statistics Board, U.S.D.A.*

Production of Oats in the United States, by States In Millions of Bushels

Year	Illinois	Indiana	Iowa	Michigan	Minnesota	Missouri	Nebraska	New York	No. Dakota	Ohio	Oregon	Pennsylvania	So. Dakota	Texas	Wisconsin	California
1979	15.6	6.4	63.0	18.9	84.9	2.0	21.2	18.0	37.0	20.3	4.0	18.4	94.4	16.8	55.9	4.1
1980	14.0	5.9	62.0	20.1	82.7	2.0	15.6	17.9	13.5	19.4	4.1	19.0	66.0	12.6	58.7	4.3
1981	13.5	5.5	59.5	21.1	90.1	4.6	15.8	17.9	44.2	17.0	4.6	20.0	70.5	18.9	52.6	3.6
1982	11.8	6.7	54.2	28.4	97.9	3.3	26.7	18.2	55.7	23.5	6.4	19.8	123.5	10.7	49.3	3.4
1983	12.6	4.6	38.3	15.6	77.0	2.5	13.6	11.4	63.6	15.4	6.0	16.2	79.2	24.0	45.1	2.9
1984	11.4	5.0	47.4	21.7	78.0	1.6	15.7	10.6	50.0	13.9	6.6	16.0	86.8	8.8	53.3	3.5
1985	12.5	7.6	57.8	26.1	77.0	5.8	25.6	17.7	44.5	26.4	9.2	21.0	79.5	15.0	51.5	3.0
1986	14.4	6.4	39.1	17.0	43.4	5.0	21.2	12.9	38.5	12.2	7.6	16.1	46.2	8.4	52.7	3.2
1987	13.1	6.4	35.8	17.1	45.6	3.4	17.6	12.0	36.4	17.5	5.2	14.8	52.9	9.9	43.2	2.8
1988	9.2	3.0	25.0	6.0	24.8	1.5	12.2	7.5	7.2	9.0	6.5	13.0	20.0	9.0	19.7	2.7
1989	16.0	6.8	54.0	20.1	46.8	3.6	8.6	9.1	20.2	15.8	6.9	13.8	44.0	6.6	46.9	3.4
1990	11.5	4.8	40.8	13.1	48.2	2.2	13.4	8.2	30.6	16.1	4.6	15.8	53.2	9.2	47.6	3.0
1991[1]	8.1	2.7	26.1	6.9	34.8	1.9	11.3	5.9	34.5	9.4	5.0	9.7	41.3	7.4	35.8	2.5

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.437

Oats Supply and Utilization in the United States

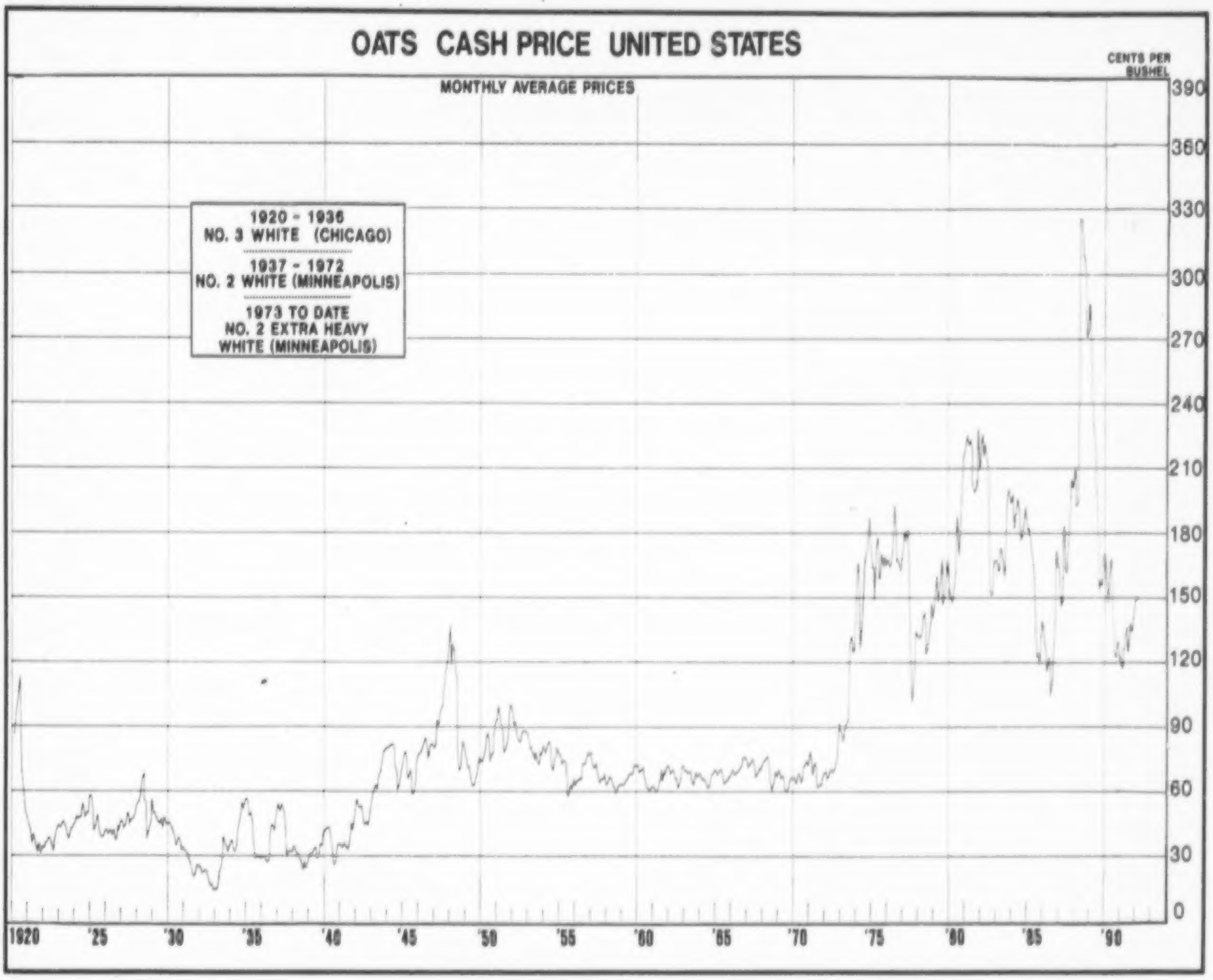
Crop Year Begin June	Acreage Planted	Acreage Harvested	Yield	Production	Imports	Total supply	Feed & residual	Food & industrial	Seed	Exports	Total use	Ending stocks	Farm price	Nat. avg. supp. rate	Target price
	– Mil. acres –		Bu/acre	Mil. bu										$/bu.	
1980/1	13.4	8.7	53.0	458.8	1.1	696.3	436.5	41.0	33.0	8.8	519.3	177.0	1.72	1.16	0
1981/2	13.6	9.4	54.2	509.5	1.5	688.0	458.0	41.2	34.2	2.7	536.1	151.9	1.88	1.24	0
1982/3	14.0	10.3	57.8	592.6	3.5	748.0	442.5	41.7	43.3	.8	528.2	219.8	1.49	1.31	1.50
1983/4	20.3	9.1	52.6	476.5	29.9	726.2	473.9	40.9	29.5	.9	545.3	180.9	1.62	1.36	1.60
1984/5	12.4	8.2	58.0	473.7	33.6	688.2	435.6	41.0	31.2	.5	508.3	179.9	1.67	1.31	1.60
1985/6	13.2	8.1	63.6	518.5	27.2	728.2	459.9	44.0	38.4	2.2	544.5	183.7	1.23	1.31	1.60
1986/7	14.7	6.8	56.3	385.0	32.4	603.4	392.3	45.0	30.6	2.8	470.7	132.7	1.21	.99	1.60
1987/8	17.9	6.9	54.3	373.7	45.7	553.0	360.5	45.0	34.0	1.5	441.0	112.0	1.56	.94	1.60
1988/9	13.9	5.5	39.3	217.6	62.9	392.5	193.8	72.7	27.1	.6	294.2	98.3	2.61	.91	1.55
1989/90[1]	12.1	6.9	54.3	373.6	65.8	537.7	265.4	91.3	23.2	.8	380.8	156.9	1.49	.85	1.50
1990/1[2]	10.4	5.9	60.1	357.5	71.0	585.4	294.1	100.4	19.1	.6	414.2	171.2	1.14	.81	1.45
1991/2[2]	8.7	4.8	50.6	242.5	65.0	478.8	245.0	— 125.0 —		1.0	370.8	108.0	1.15	.83	1.45

[1] Preliminary. [2] Estimate. *Source: Economic Research Service, U.S.D.A.* T.430

Volume of Trading in Oats Futures at Chicago Board of Trade In Millions of Bushels

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1979–0	127.8	111.6	76.1	98.6	96.0	47.1	56.9	85.3	53.8	81.1	131.5	144.8	1,110.6
1980–1	200.4	183.9	199.6	197.1	167.9	151.0	124.8	170.2	129.2	136.4	120.5	162.2	1,943.2
1981–2	125.3	134.6	117.0	144.5	264.9	221.0	166.7	184.7	204.3	223.6	196.5	247.9	2,231.0
1982–3	221.0	218.9	151.2	113.2	127.6	82.5	121.1	154.0	141.3	213.6	159.1	159.7	1,863.2
1983–4	160.1	254.5	180.4	95.1	102.4	57.9	58.9	91.9	77.1	89.8	59.8	76.6	535.0
1984–5	64.7	88.7	38.5	41.0	48.8	39.5	46.1	38.1	33.7	33.7	30.9	31.2	534.9
1985–6	42.6	55.6	37.2	57.0	53.9	35.2	54.7	41.7	41.9	62.0	59.2	62.3	603.3
1986–7	42.0	45.6	47.0	47.2	93.6	107.6	94.0	138.3	120.6	106.2	121.3	117.0	1,080.4
1987–8	103.7	153.6	109.4	135.4	139.4	116.6	92.1	121.2	146.6	162.1	162.6	267.1	1,709.8
1988–9	160.3	121.1	107.6	108.1	183.0	141.1	168.5	136.6	150.7	188.7	138.7	195.2	1,799.6
1989–90	148.7	174.9	104.2	86.7	191.9	64.5	123.3	158.7	169.4	225.7	270.0	231.8	1,949.8
1990–1	160.2	248.0	126.0	139.0	236.9	77.8	100.2	151.4	151.6	213.6	102.9	224.7	1,932.3
1991–2	185.5	205.3	89.3	101.5	172.8	76.0							

Source: Chicago Board of Trade T.440



Average Cash Price[1] of No. 2 Heavy White Oats at Minneapolis In Cents Per Bushel

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average[1]	– No. 2 Heavy – White, Portland	Toledo
1977–8	138	115	102	111	117	134	132	132	132	133	140	143	127	144	136
1978–9	136	124	128	136	139	147	140	147	154	160	148	155	143	179	137
1979–0	168	160	147	155	165	167	159	152	150	148	152	162	157	187	160
1980–1	188	180	170	186	196	215	216	220	225	223	221	223	204	242	217
1981–2	218	202	199	202	209	228	210	223	226	216	221	216	214	236	223
1982–3	212	187	153	151	151	167	167	167	163	163	173	171	169	218	155
1983–4	167	160	179	194	200	197	194	198	182	188	189	196	187	195	201
1984–5	192	184	177	179	184	192	187	181	182	179	173	165	181	212	192
1985–6	159	144	123	124	119	132	139	137	130	127	116	122	131	160	108
1986–7	118	105	112	129	139	172	166	164	156	146	159	183	146	153	120
1987–8	164	161	177	185	197	205	202	210	206	193	194	212	192	176	168
1988–9	326	325	309	307	299	271	274	287	259	249	230	222	280	224	226
1989–90	197	172	159	158	161	168	170	156	148	157	163	168	165	163	140
1990–1[2]	152	137	125	123	129	130	124	122	118	127	132	136	130	158	117
1991–2[2]	125	133	138	135	141										

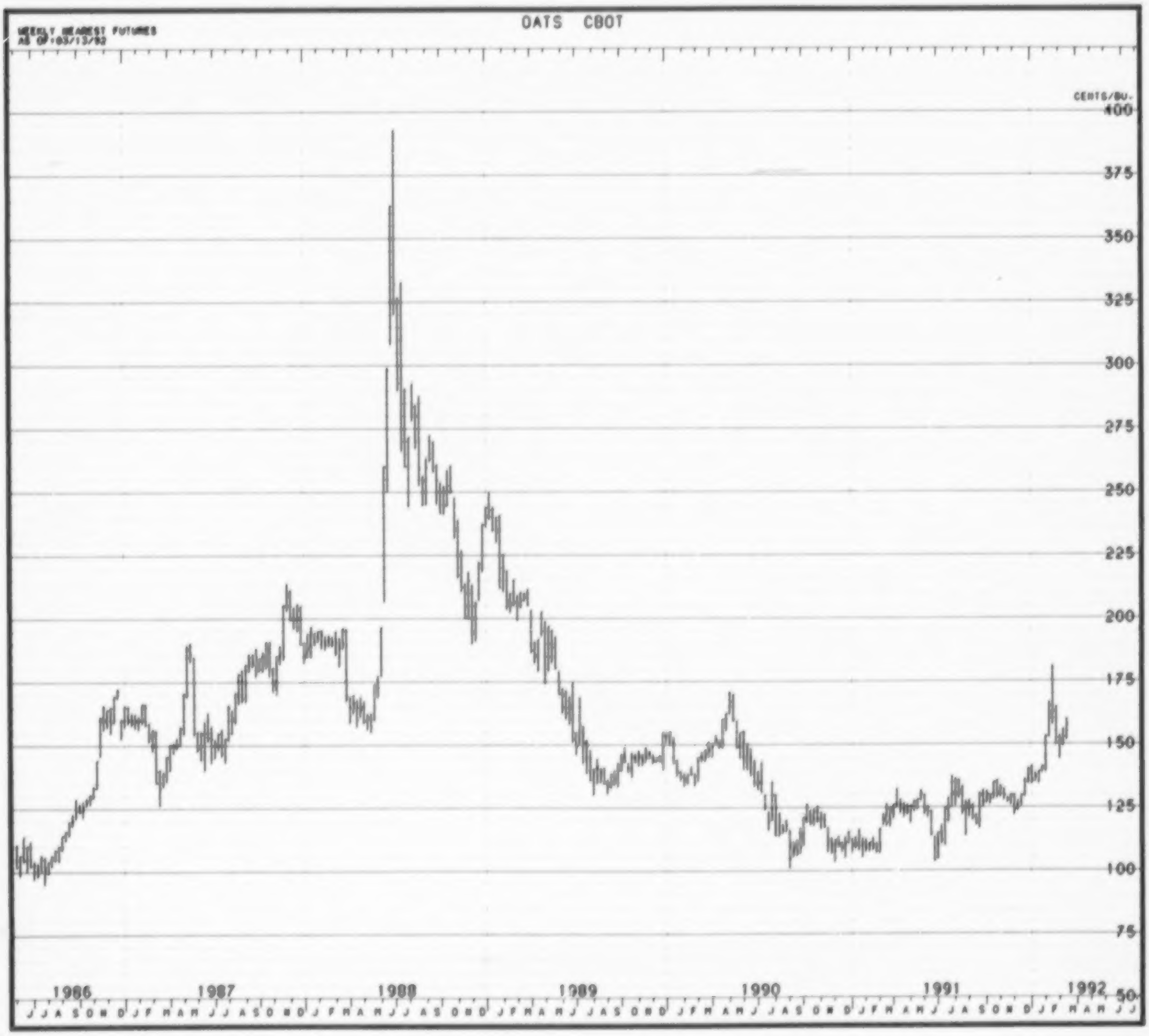
[1] Weighted average of reported daily cash sales. [2] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.435

OATS

Average Open Interest of Oats at the Chicago Board of Trade In Thousands Bushels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1980	24,499	23,531	18,389	19,679	21,226	23,404	29,895	39,517	41,415	39,984	39,173	31,350
1981	31,927	38,119	28,845	26,146	24,986	30,697	27,576	26,105	25,575	35,410	42,468	38,553
1982	37,489	39,152	41,452	42,049	41,291	44,044	43,135	39,289	31,892	31,357	29,221	24,112
1983	25,641	33,640	36,640	47,839	48,755	45,556	45,013	50,584	67,392	40,143	32,498	23,127
1984	20,765	24,969	22,832	24,743	19,832	21,599	23,230	24,258	23,225	22,685	22,820	19,516
1985	18,430	19,392	17,351	17,202	14,659	14,815	15,240	18,312	15,692	19,054	21,332	17,504
1986	16,705	18,960	19,377	21,712	18,559	15,443	14,936	16,760	15,197	15,537	23,181	26,657
1987	31,648	36,004	33,508	30,655	26,271	24,536	28,090	36,166	35,212	35,173	28,988	29,724
1988	35,008	42,084	39,209	43,132	43,594	48,130	40,230	35,936	34,095	35,978	45,844	46,842
1989	50,341	51,226	50,761	50,283	47,606	48,831	48,967	47,272	48,824	55,834	59,311	56,240
1990	56,134	59,043	56,777	61,213	62,563	54,455	53,714	60,559	64,824	74,022	75,574	58,791
1991	59,450	64,161	69,476	78,100	71,117	65,457	55,584	54,469	51,842	57,798	56,284	46,776
1992	47,776											

Source: Chicago Board of Trade T.438



High, Low & Closing Prices of May Oats Futures at the Chicago Board of Trade In Cents per Bushel

Year of Delivery		Year Prior to Delivery								Delivery Year					Life of Delivery Range
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1984	High	185	183½	200	226	220	206	199½	192¼	188	181½	185½	189¼	193	226
	Low	179½	177	181	189½	199¼	193	184½	180½	178	163	169	169¾	171½	163
	Close	179½	181½	197½	200	206	193	184½	188¾	180	168¾	185½	171	193	—
1985	High	—	191	185¾	181½	175	179¾	180¾	179¾	177½	174½	173¼	170	164	191
	Low	—	181	175	171	171	173	176	172½	169¼	167½	167¼	160¼	156¾	156¾
	Close	—	190	178½	172¼	173½	179	179	176¾	172¼	170¼	167¾	160½	160½	—
1986	High	163	161	150½	135	135¾	138¾	141¾	143½	142	129	122½	109	119	163
	Low	160	149¾	133½	127½	128	130½	134¾	133½	121½	118	106¾	94¼	101½	94¼
	Close	161	150¾	133¾	130	135	138½	135¼	142¼	124¼	120	108¼	109	108½	—
1987	High	116½	119	117½	123	128¾	135¼	150¾	155¾	157	162	147½	166¾	190½	190½
	Low	116¼	112½	110	115	120½	126	134¼	136	151¾	144	130½	141½	167¼	110
	Close	116¼	115½	113¼	122¾	128	133¾	146	155¾	154½	149½	140½	166¾	183¼	—
1988	High	159	174	170½	188½	188	190	194½	191½	187	184¼	182	169¾	170	194½
	Low	150¾	147	155½	162¾	176	167½	162	173	175	176¼	158½	157	155	147
	Close	150¾	160	170	179	180	169¼	189	175½	185	181	161½	159¼	166	—
1989	High	197½	340	325	286½	281	259	241	243	249½	229½	215½	202¾	197	340
	Low	186¾	194	247	249	247	238	205½	206	213	206	186½	174	179	174
	Close	197½	310	267	261¾	247¼	242	211¼	242¼	225½	211¾	187¼	178	180½	—
1990	High	200½	201	199¾	172	164¾	164	166	166	163	149¾	154¼	165½	171	201
	Low	190	179	157	158½	153½	155½	158½	158	143¼	142	145	148½	144½	142
	Close	194½	182	157	164	159¼	159¼	164½	161	143¼	147¼	150	165¼	144½	—
1991	High	184	183¾	178¾	157½	130½	142¼	139¼	129	122	119¼	131	132½	130	
	Low	174	169	149½	133¼	129	134½	122	116½	111¼	113½	118	118¾	122	
	Close	175	173	157½	136	137¾	138½	128½	116½	114¾	117	126	121¼	130	

Source: Chicago Board of Trade

T.439

Average Price Received by U.S. Farmers for Oats In Cents Per Bushel

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average[1]
1981–2	199	184	172	174	178	188	194	197	199	202	199	199	189
1982–3	188	157	139	135	132	140	144	146	148	149	154	154	149
1983–4	151	146	145	155	162	167	173	181	188	181	182	184	162
1984–5	180	168	162	160	169	164	172	174	169	168	168	160	167
1985–6	159	131	116	110	108	117	120	118	116	114	113	121	123
1986–7	110	90	86	99	110	132	144	146	147	145	150	157	121
1987–8	152	129	140	149	161	162	176	179	184	178	182	184	156
1988–9	263	286	254	257	256	241	247	252	246	241	224	213	261
1989–90	182	153	147	138	147	148	153	147	143	139	144	145	149
1990–1	133	115	106	109	114	116	117	113	113	116	116	116	114
1991–2	108	108	109	112	119								

[1] Weighted average by sales. *Source: Crop Reporting Board, U.S.D.A.*

T.433

Oats Under Price Support Through the End of the Month (Cumulative Total from Current Season's Crop) In Millions of Bushels

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1981–2	.6	3.4	6.1	7.4	8.0	8.7	9.3	9.5	9.6	9.6	9.6	9.6	9.6
1982–3	.1	1.2	4.0	5.8	6.9	7.7	8.3	8.5	8.8	9.0	9.1	9.1	9.1
1983–4	.1	1.0	1.4	2.8	3.1	3.2	3.4	3.5	3.5	3.6	3.6	3.6	3.6
1984–5	—	.9	2.1	2.6	2.8	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1
1985–6	.1	1.0	2.3	3.6	4.0	4.3	4.6	4.8	4.9	5.2	5.3	5.3	5.3
1986–7	.2	1.8	4.1	5.9	6.7	7.2	7.4	7.6	7.7	7.7	7.7	7.7	7.8
1987–8	—	.1	1.4	2.1	2.5	2.6	2.6	2.8	2.9	2.9	2.9	2.9	2.9
1988–9	—	.4	.6	.7	.8	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0
1989–90	—	.6	1.1	1.3	1.3	1.5	1.6	1.7	1.8	1.8	1.8	1.8	1.8
1990–1	—	.4	1.0	1.2	1.2	1.3	1.3	1.3	1.2	1.1	.8	.7	1.0
1991–2	.4	.9	1.2	1.4	1.5								

Source: U.S. Department of Agriculture

T.432

Olive Oil

World olive oil production in 1991/92 was projected to rise by over 10 percent to almost 1.8 million tonnes. Olive oil comprises about 3 percent of the world's vegetable and marine oil output. Olives are a cyclical crop; large crops are followed by small ones, and the 1991/92 crop was considered a large one. The harvest starts in the northern Mediterranean region in mid-November and moves south. The end of the harvest is in March. The major producers are Spain, Italy, Tunisia and Greece. Among countries there is also a cyclical pattern, with some in low output years, while other are harvesting large crops. Tunisia has emerged as a major producer and expected a record crop in 1991/92 of perhaps 220,000 tonnes, up significantly from the previous season. Spain remains the largest producer.

Global exports in 1991/92 were projected at 530,000 tonnes, down over 20 percent from a year earlier. The reason for the decline was a drop in the exportable surplus from Spain, due to heavy shipments in the 1990/91 season. In that period, Spain exported 435,000 tonnes of olive oil. The European Community subsidizes production, and these payments provide a means of income support in poorer areas where olives are grown. The U.S. is a major import market, having taken about 100,000 tonnes in 1990/91.

Despite its price premium to other cooking oils, olive oil remains the cooking oil of choice for many because of its taste and health benefits. Nonetheless, olive oil usage has shown little growth in recent years, unlike some other oils. The EC is the largest user of olive oil, with consumption in 1991/92 estimated at 1.3 million tonnes, the same level as a year earlier.

Global ending stocks of olive oil were forecast to be 470,000 tonnes, up 17 percent from the year before.

World Production of Olive Oil (Pressed Oil)[2] In Thousands of Metric Tons

Crop Year[2]	Algeria	Greece	Italy	Jordan	Lebanon	Argentina	Morocco	Portugal	Spain	Syria	Tunisia	Turkey	Libya	Israel	World Total
1980–1	18	321	606	10	2	11	23	32	479	83	145	170	8	2	1,921
1981–2	15	229	515	5	12	14	34	23	300	44	70	60	8	4	1,350
1982–3	16	324	430	7	8	16	23	79	666	97	55	170	7	3	1,908
1983–4	13	230	824	10	15	13	28	9	258	31	150	40	8	4	1,644
1984–5	15	236	343	6	7	9	27	43	658	60	95	80	12	4	1,613
1985–6	18	345	607	8	5	9	40	33	397	48	105	70	9	2	1,711
1986–7	15	230	355	14	6	7	35	41	491	73	120	120	7	3	1,560
1987–8	10	287	688	3	5	9	38	35	734	32	95	55	7	3	2,022
1988–9	10	296	361	12	7	10	30	23	399	90	58	90	6	4	1,435
1989–90[1]	16	320	540	7	5	9	70	41	551	30	130	35	8	3	1,799
1990–1[3]	10	210	280	8	6	8	40	35	612	83	170	90	7	3	1,463
1991–2[3]	13	320	620	11	7	9	50	24	532	40	180	70	9	8	1,924

[1] Preliminary. [2] Total pressed oil in marketing year beginning Nov. 1; excludes sulfur oil extracted from residues. [3] Forecast.
Source: Foreign Agricultural Service, U.S.D.A.; Oil World. T.441

Average Unit Value of U.S. Olive Oil Imports In Thousand Dollars Per Metric Ton

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	1,336	1,313	1,301	1,307	1,424	1,357	1,379	1,342	1,438	1,361	1,397	1,284	1,353
1985	1,256	1,169	1,215	1,235	1,256	1,249	1,251	1,257	1,308	1,333	1,292	1,338	1,263
1986	1,402	1,400	1,402	1,469	1,492	1,495	1,587	1,554	1,751	1,572	1,732	1,589	1,537
1987	1,690	1,763	1,652	1,726	1,635	1,577	1,588	1,608	1,563	1,646	1,609	1,696	1,646
1988	1,682	1,694	1,736	1,699	1,701	1,669	1,465	1,562	1,691	1,582	1,493	1,606	1,632
1989	1,642	1,642	1,890	1,930	2,005	1,981	1,919	1,919	1,862	1,917	1,910	2,017	1,886
1990	1,892	1,940	1,931	2,034	2,047	2,047	2,044	2,169	2,142	2,029	2,245	2,170	2,058
1991	2,195	2,213	2,355	2,188	2,283	2,274	2,281	2,282	2,401	2,211	2,417		

Source: U.S. Bureau of the Census

World Olive Oil Supply and Distribution In Thousands of Metric Tons

Crop Year	Production	Exports	Imports	Consumption	Ending Stocks	Crop Year	Production	Exports	Imports	Consumption	Ending Stocks
1981–2	1,337	204	296	1,593	700	1987–8	1,900	458	474	1,772	799
1982–3	1,908	360	401	1,627	1,022	1988–9	1,409	491	512	1,762	467
1983–4	1,644	296	338	1,810	908	1989–90	1,631	463	528	1,804	591
1984–5	1,600	484	503	1,729	799	1990–1[1]	1,710	486	551	1,769	597
1985–6	1,626	367	500	1,718	839	1991–2[2]	1,760	530	660	1,830	470
1986–7	1,557	545	572	1,768	655						

[1] Preliminary. [2] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.*

Onions

Salient Statistics of Onions in the United States

Crop Year	Jan. 1 Stocks Frozen	Annual Pack Frozen	Imports Canned	Acres Harvested	Yield Per Acre	Production	Price Per Cwt.	Farm Value	Domestic Exports (Fresh)	Imports (Fresh)	Per Capita[2] Utilization (Lbs.)	Per Capita[2] Utilization Frozen
	Million Pounds	Million Pounds	Million Pounds	Acres	Cwt.	1,000 Cwt.	Dollars	$1,000	Million Pounds	Million Pounds		
1983	31.9	139.6	9.5	123,640	315	39,166	12.40	439,297	183.2	204.9	15.0	.6
1984	28.8	156.5	12.1	128,450	338	43,068	10.60	415,196	273.9	267.2	15.9	.7
1985	23.4	142.0	14.0	122,760	367	45,059	9.08	347,328	121.6	263.7	16.4	
1986	27.4	185.5	12.3	115,540	375	43,615	10.90	439,239	164.4	247.6	16.7	
1987	35.7	188.0	13.0	123,720	364	45,113	12.50	505,163	195.8	371.2	16.3	
1988	29.6	198.9	14.1	128,950	362	46,733	9.75	413,996	245.1	407.0	17.6	
1989	33.4	208.8	3.3	132,660	361	47,902	11.40	496,971		359.7	17.9	
1990[1]	39.6	78.3	3.7	138,340	380	52,781	10.50	488,786		377.0	18.6	
1991[1]	34.4		3.9	137,200		50,373				440.0	18.8	

[1] Preliminary. [2] Includes fresh and processing. *Source: Economic Research Service, U.S.D.A.* T.443

Production of Onions in the United States In Thousands of Hundredweight (Cwt.)

Year	Spring				Summer										Grand Total
	Texas	California	Arizona	Total (All)	New Mexico	Texas	California	Colorado	Idaho	Michigan	Minnesota	New York	Oregon	Total (All)	
1983	3,800	2,166	656	6,622	1,248	1,643	9,179	3,432	2,475	2,573	158	2,793	5,292	32,140	38,762
1984	3,348	2,734	805	6,887	1,365	1,560	9,819	4,636	2,323	2,933	156	3,384	6,785	36,770	43,657
1985	3,230	3,510	564	7,304	1,463	943	9,250	5,355	3,740	2,535	194	3,960	6,785	37,755	45,059
1986	3,600	2,886	660	7,146	1,810	1,537	9,953	4,590	3,710	1,653	208	3,456	5,945	36,155	43,301
1987	2,750	3,198	585	6,533	2,106	799	10,730	4,688	4,620	1,900	195	3,132	7,032	39,334	45,867
1988	3,220	3,315	450	6,985	2,752	861	10,512	5,535	4,028	2,000	126	2,925	6,649	39,748	46,733
1989	3,225	3,080	440	7,380	3,000	1,040	10,125	5,520	3,996	2,212	161	2,912	6,710	40,516	47,902
1990[1]	2,520	3,570	473	7,655	2,870	1,377	12,675	5,130	4,180	2,442	208	5,120	6,865	45,853	53,508
1991[1]	3,264	3,160	441	7,093	2,960	960	11,250	4,953	4,543	2,044	294	3,510	7,588	42,017	49,110
1992[1]															

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.444

Cold Storage Stocks of Fresh Onions in the United States In Thousands of Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1983	4,183	4,407	4,116	2,988	1,042	235	325	724	385	785	1,348	8,826
1984	8,648	7,006	2,527	343	1,230	556	527	1,212	5,270	5,618	5,354	6,949
1985	7,465	5,518	4,454	2,248	810	4,806	2,804	1,280	6,205	6,526	5,890	6,128
1986	5,171	5,325	2,572	1,573	545	1,769	1,627	1,001	346	2,116	4,693	7,784
1987	6,773	5,330	2,710	1,883	1,560	2,403	1,181	137	1,276	2,500	3,823	6,641
1988	4,406	1,982	192	35	575	2,551	1,587	268	3,508	7,453	10,499	9,018
1989	7,608	4,914	2,348	70	462	670	184	140	2,133	13,283	16,492	16,000
1990	11,858	12,787	7,282	5,226	2,633	3,346	2,394	984	2,296	13,927	23,224	21,731
1991[1]	17,030	14,387	5,918	2,885	995	1,957	2,225	1,695	2,164	26,746	35,362	29,414
1992[1]												

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.445

FOB Price Received by Growers for Onions in the U.S. In Dollars Per Hundred Pounds (Cwt.)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[2]
1983	5.13	6.35	7.59	10.70	10.60	9.62	10.70	10.90	10.80	11.00	12.90	18.30	12.40
1984	17.30	19.40	25.20	25.30	13.90	11.00	14.00	13.60	11.00	9.52	10.30	11.90	10.60
1985	10.20	8.91	7.95	9.12	13.00	10.90	19.20	11.20	7.61	6.40	6.97	8.19	9.08
1986	7.70	7.01	7.07	9.37	9.31	10.70	11.20	9.79	10.90	12.00	10.60	11.80	10.90
1987	16.20	17.60	19.90	26.30	22.50	16.80	14.90	10.60	9.71	8.77	9.38	10.50	12.50
1988	15.70	15.70	15.10	16.80	8.90	8.52	10.40	8.97	12.50	12.10	12.20	12.00	9.75
1989	11.50	10.80	9.56	10.90	9.46	12.90	16.90	16.00	11.30	10.30	9.83	9.99	11.60
1990	11.00	15.70	19.60	19.70	13.40	10.50	9.49	10.80	9.01	8.29	9.54	10.90	12.35
1991[1]	16.60	10.70	13.00	20.10	22.60	14.60	17.00	11.90	10.10	8.60	9.30	9.94	13.70
1992[1]													

[1] Preliminary. [2] Seasonal Average. *Source: Crop Reporting Board, U.S.D.A.* T.448

Oranges and Orange Juice

While the 1990/91 Florida orange crop showed a healthy recovery from the previous season's freeze-damaged conditions, the California crop had its own freeze to bounce back from in 1991. California oranges are used primarily for the fresh market, while the majority of those grown in Florida are utilized for juice. The market reflected that difference in 1991, as fresh orange prices rose sharply, while juice prices dropped from record levels the year before.

Florida orange production in 1990/91 was 151.5 million boxes. The crop was followed by a lower-than-expected forecast for the 1991/92 season. The orange tree population in Florida has been growing for several years, and the longer trend favors increased production of oranges there as more trees reach maturity. The 1991/92 Florida crop was forecast by USDA in October to be 139 million boxes, and the futures market responded to the initial estimate with a sharp rally late in the year. Cash prices were raised, after consumers had seen more moderate retail prices early in 1991, compared to the record highs seen in 1990. Brazilian processors raised their prices to 175 cents/lb. by late 1991, from 135 cents before USDA's October crop report.

While California was expected to double its orange output in the 1991/92 season, the recovery will still leave the state's production about 35 percent below what it was before the December 1990 freeze. Prices of fresh oranges reflected the previous year's freeze-damaged crop, with the 1990/91 season average price for all U.S. fresh oranges at $17.21 per box, against $10.32 the previous season.

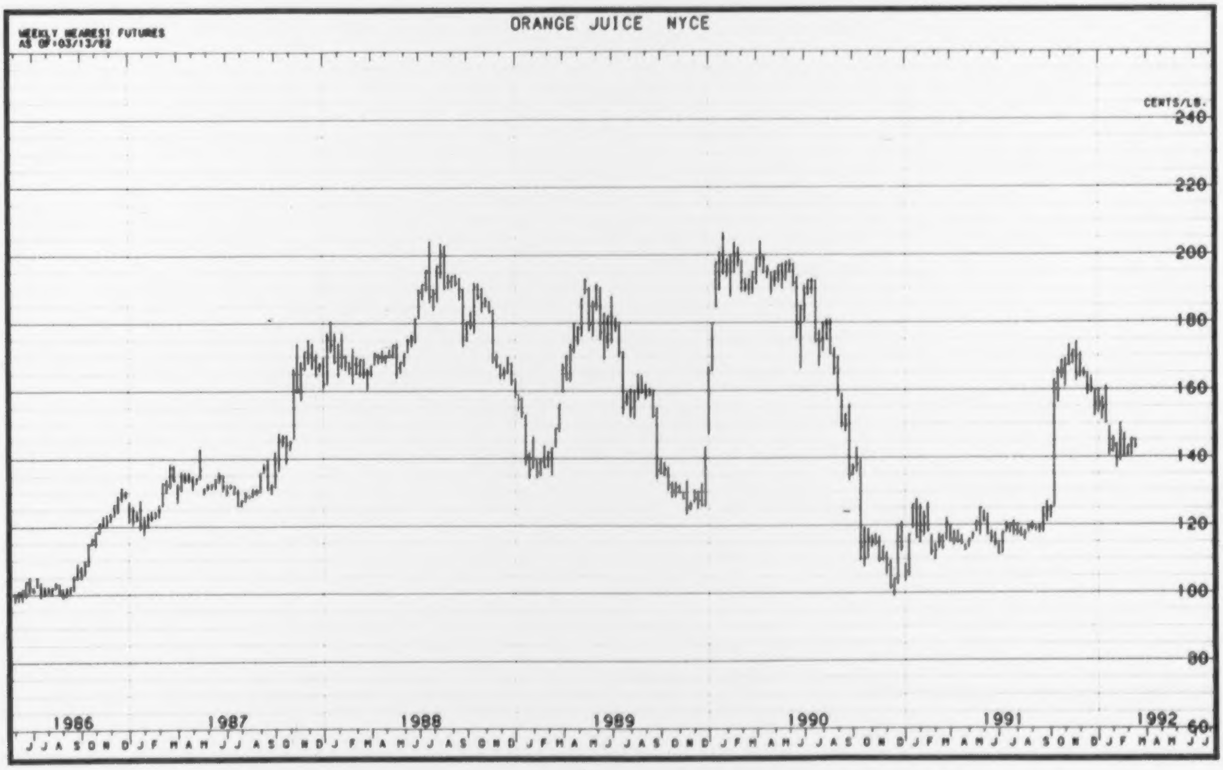
U.S. per capita orange juice consumption was estimated to be 4.70 gallons in 1990/91, compared to 4.29 gallons the previous season. The increase in consumption was attributed to prices that were below record levels a year earlier. Consumption was still below levels seen before the 1989 Florida freeze, however, and was likely to drop in the 1991/92 season, due to higher prices resulting from the smaller Florida orange crop.

Brazil is, by far, the leading exporter of orange juice to the U.S. Imports of Brazilian juice dropped during the 1990/91 season from record levels the previous season, but were expected to rise again in 1991/92, due to lower U.S. juice supplies.

U.S. grapefruit production was forecast to drop by about 5 percent in 1991/92, mainly because of a smaller Florida crop. Florida generally accounts for 80 percent of U.S. grapefruit output.

Futures Market

FCOJ futures and options on those futures are traded on the Citrus Associates of the New York Cotton Exchange (NYCE).



World Production of Oranges In Thousands of Metric Tons

Season	Argentina	Australia	Brazil	Cuba	Egypt	Greece	Israel	Italy	Cyprus	Mexico	Morocco	South Africa	Spain	Turkey	United States	World Total[3]
1982–3	639	392	9,210	400	1,201	665	889	1,498		1,380	670	510	1,652	656	8,827	29,294
1983–4	500	488	9,588	385	1,243	691	962	2,299		1,300	747	512	2,077	730	6,691	28,927
1984–5	653	489	1,715	390	1,182	775	941	1,960		1,000	686	486	1,365	760	6,109	29,355
1985–6	623	523	11,015	447	1,168	554	685	2,257	157	1,410	841	497	1,942	505	6,913	29,905
1986–7	621	475	10,650	496	1,235	881	815	2,424	204	1,683	650	577	2,059	750	7,122	31,196
1987–8	650	394	10,400	508	1,387	462	627	1,343	138	1,942	891	681	2,442	700	7,903	30,990
1988–9	620	544	14,150	474	1,199	770	546	2,170	170	2,268	994	629	2,216	740	8,272	35,762
1989–90[1]	750	480	11,950	604	1,397	932	877	2,067	223	2,200	775	697	2,400	740	7,083	33,175
1990–1[2]	740	559	11,950	600	1,574	819	567	1,820	174	2,300	1,103	689	2,565	735	7,258	33,453
1991–2[2]				600	1,600	703	550	2,000	173	2,050	790		2,490	850	7,774	

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.449

U.S. Salient Statistics of Oranges & Orange Juice

	Production[2]					Frozen Concentrated Orange Juice—Florida				Florida Crop Processed				Brazilian U.S. Imports of Frozen Concentrated Orange Juice		
Season	California	Florida	Total U.S.	Farm Price $ Per Box	Farm Value Million $	Carry-in	Pack	Total Supply	Total Season Movem.	Frozen Concentrates	Chilled Products	Total Processed	Yield Per Box (Gall.)	Pack	Exports Total	Exports To U.S.
	Million Boxes					In Million Gallons				Million Boxes				In Million Gallons[4]		
1982–3	76.1	139.6	225.2	6.61	1,167.3	53.4	228.4	281.8	239.0	114.6	18.3	135. 5	1.48	189.6	155.2	
1983–4	48.5	116.7	169.5	5.85	1,317.1	42.8	239.9	282.7	228.3	94.5	17.0	114.4	1.29	175.2	201.4	105.1
1984–5	52.4	103.9	158.8	7.68	1,303.9	54.4	209.6	264.0	215.7	86.1	14.9	102.9	1.38	250.3	246.5	174.5
1985–6	53.9	119.2	175.7	9.16	1,455.4	48.3	215.1	263.5	226.5	91.9	17.0	119.2	1.38	285.9	190.7	112.2
1986–7	57.9	119.7	181.2	6.18	1,090.4	37.0	228.0	265.0	225.1	90.5	19.2	119.7	1.51	210.4	277.8	139.8
1987–8	59.0	138.0	200.3	7.18	1,322.5	39.8	240.9	280.7	238.6	113.9	23.6	138.0	1.55	244.8	254.5	120.5
1988–9[1]	58.9	146.6	207.2	7.08	1,773.7	42.1	239.1	281.2	234.9	107.4	29.5	146.6	1.54	245.8	243.8	123.1
1989–90[3]	71.4	110.2	184.5	5.99	1,848.6	46.3	90.3	231.1	191.1	70.1	33.4	110.2	1.23	362.0	330.7	132.4
1990–1[3]	26.8	151.5	180.1		1,468.9	39.9	151.4			100.4	38.1	151.5	1.52	294.8	284.5	97.0
1991–2	53.0	136.0	191.2		1,672.0					87.7	37.0	136.0		274.1	279.3	75.0

[1] Preliminary. [2] Fruit ripened on trees, but destroyed prior to picking is not included. [3] Estimate. [4] 42° BRIX.
Source: Economic Research Service, U.S.D.A. Florida Citrus Processors Assoc. T.450

U.S. Cold Storage Stocks of Orange Juice Concentrate[2] In Millions of Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1983	835.9	1,028.1	1,016.2	963.3	1,187.0	1,408.0	1,318.6	1,192.4	960.8	810.7	684.8	595.0
1984	631.1	785.7	956.3	976.3	920.1	998.2	903.2	780.4	707.0	595.8	557.3	564.8
1985	651.6	883.4	1,050.6	1,102.7	1,188.6	1,229.5	1,063.7	1,036.1	912.4	882.2	778.8	656.0
1986	679.2	888.4	966.8	911.5	1,031.6	1,047.5	1,056.9	920.3	855.3	715.4	577.8	524.8
1987	621.2	874.8	1,012.7	933.8	999.0	1,109.1	1,105.1	942.1	792.6	840.0	652.8	569.0
1988	662.4	903.8	1,072.9	1,004.1	1,019.0	1,122.1	1,171.8	998.5	827.0	693.3	638.7	589.5
1989	721.6	980.9	1,155.9	1,087.0	1,144.8	1,296.1	1,324.8	1,167.5	932.6	808.4	725.7	669.7
1990	749.6	926.6	1,046.5	1,119.2	980.9	1,148.2	1,074.8	1,008.1	901.4	797.1	802.0	871.3
1991[1]	1,031.6	1,195.8	1,199.5	1,236.9	1,363.2	1,304.7	1,110.6	1,007.5	876.9	765.2	601.8	655.4

[1] Preliminary. [2] Adjusted to 42° BRIX basis (9.896 lbs./gal.) *Source: Crop Reporting Board, U.S.D.A.* T.451

Average Open Interest of Frozen Concentrated Orange Juice Futures In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	9,497	8,718	6,645	6,281	6,173	6,344	5,930	6,256	6,301	6,317	6,027	6,108
1984	8,353	10,294	12,086	11,809	10,745	12,763	12,444	11,340	10,375	9,989	9,412	8,776
1985	8,023	7,094	6,378	6,588	6,027	5,854	5,214	4,826	4,367	5,092	6,352	11,571
1986	10,440	8,532	7,986	7,010	6,909	6,860	7,198	6,669	6,924	8,287	9,270	10,849
1987	11,222	10,283	10,031	9,206	8,658	8,104	6,994	6,665	7,229	8,810	9,000	10,212
1988	11,683	14,089	16,708	14,576	11,861	11,427	11,235	11,192	9,708	8,564	9,170	8,697
1989	7,169	6,959	7,009	7,821	8,374	9,767	8,340	7,531	6,857	7,218	7,029	9,887
1990	9,667	11,067	11,877	11,952	10,528	10,229	9,413	7,485	6,867	5,939	5,802	6,983
1991	6,773	6,457	5,739	6,255	5,762	6,338	5,653	6,556	9,854	11,924	9,877	9,101
1992	9,095											

Source: Citrus Assoc. of the N.Y. Cotton Exchange T.456

ORANGES AND ORANGE JUICE

High, Low & Closing Prices of May Orange Juice[1] Futures at New York In Cents per Pound

Year of Delivery	Year Prior to Delivery										Delivery Year					Life of Delivery Range
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1985 High	170.00	176.00	181.50	179.50	168.50	172.00	185.00	181.75	172.90	170.00	183.50	178.00	170.35	161.40	159.90	185.00
Low	155.00	166.50	174.50	167.00	164.90	167.00	167.50	166.50	166.80	162.40	159.20	166.60	160.30	154.70	151.00	114.90
Close	165.60	176.00	178.65	168.00	166.90	169.70	181.20	166.90	169.90	163.90	178.60	168.10	161.60	158.20	151.20	—
1986 High	166.25	160.50	152.45	140.90	133.45	127.00	128.90	128.10	116.60	131.50	113.25	92.95	95.70	96.40	101.00	178.40
Low	160.35	152.50	136.70	133.10	124.00	122.95	122.65	111.95	113.00	107.25	88.30	83.50	82.60	89.00	93.10	82.60
Close	161.30	152.50	140.00	133.15	124.65	122.95	128.50	114.45	114.55	108.15	89.00	84.30	95.60	92.75	96.55	—
1987 High	91.40	94.75	101.85	109.95	110.00	108.70	109.50	120.20	123.70	134.80	128.80	127.85	138.50	136.25	143.00	143.00
Low	84.50	90.50	92.95	100.40	101.10	105.80	106.80	108.00	119.50	123.95	118.60	120.85	127.00	128.10	132.25	84.45
Close	91.40	92.75	100.80	108.25	107.70	106.20	108.25	119.70	123.65	125.10	121.20	126.80	128.90	132.25	130.80	—
1988 High	130.05	126.50	126.95	123.90	124.25	128.10	132.00	145.25	171.00	174.00	176.70	173.65	167.50	172.00	174.10	176.70
Low	123.40	123.40	124.15	119.25	120.15	122.90	128.50	132.20	146.00	164.50	165.00	156.25	156.50	167.70	167.15	119.25
Close	123.40	125.00	124.20	120.50	122.85	128.10	132.00	145.25	167.50	165.70	166.85	159.00	167.25	170.15	167.15	—
1989 High	152.45	155.50	155.25	168.50	172.00	173.50	170.50	172.50	173.00	166.60	156.25	143.90	168.00	179.90	193.10	193.10
Low	144.85	148.50	151.05	151.70	167.00	167.00	162.20	166.25	163.50	156.60	132.00	132.35	139.05	162.75	176.10	132.00
Close	148.95	154.80	151.40	168.45	171.65	169.25	167.25	172.00	164.50	157.90	138.40	140.20	166.70	178.45	182.70	—
1990 High	149.80	163.50	170.60	161.50	153.10	143.15	141.55	133.10	127.80	159.00	205.85	199.75	199.25	204.00	197.50	205.85
Low	149.05	148.55	161.25	146.30	138.00	137.00	131.00	124.40	122.50	125.50	166.00	185.10	186.15	188.20	190.00	122.50
Close	149.80	163.50	161.30	152.10	141.80	141.50	131.00	126.00	126.90	159.00	196.50	190.85	198.95	193.15	190.30	—
1991 High	175.00	179.25	184.50	184.00	164.25	163.55	141.40	139.50	119.00	124.50	128.90	126.00	122.20	118.25	121.20	184.50
Low	171.00	171.75	174.75	156.25	157.75	142.40	130.25	108.50	108.30	101.50	107.00	109.50	109.80	112.40	113.50	101.50
Close	175.00	173.50	184.50	159.10	158.00	142.40	132.60	113.00	111.95	119.00	119.35	111.10	115.55	113.40	120.30	—

[1] Frozen concentrated orange juice. *Source: Citrus Associates of the N.Y. Cotton Exchange, Inc.* T.455

Volume of Trading of Frozen Concentrated Orange Juice Futures In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	28,768	20,572	8,135	11,529	9,514	10,011	8,238	7,893	9,395	16,320	11,115	49,268	190,758
1986	39,756	24,971	21,413	13,209	13,909	14,979	10,469	9,887	10,940	17,513	9,551	24,946	211,543
1987	28,566	24,342	27,999	19,569	10,651	15,470	8,805	10,710	12,330	20,321	20,724	26,758	266,641
1988	40,976	42,153	37,295	28,937	22,931	36,877	23,752	27,118	26,228	26,922	19,399	25,451	358,039
1989	26,156	26,419	28,501	26,855	30,272	32,051	23,403	19,698	17,119	18,069	15,893	39,668	304,104
1990	53,133	32,035	31,676	28,025	23,656	45,028	21,302	24,029	13,131	21,793	16,473	30,739	342,574
1991	35,037	28,221	17,298	17,116	17,991	20,956	14,905	20,187	26,412	42,016	23,288	24,171	287,598

Source: Citrus Assoc. of the N.Y. Cotton Exchange T.452

Wholesale Index Price of Frozen Orange Concentrate[1] 1982 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	127.3	133.1	133.2	132.9	133.5	132.4	130.5	126.0	123.9	119.3	114.9	112.8	126.7
1986	104.4	102.2	97.6	94.4	94.1	94.3	94.2	94.2	93.7	96.0	98.6	101.4	97.1
1987	106.9	106.9	107.4	109.5	109.7	110.0	110.1	111.0	110.6	110.6	117.2	129.9	111.7
1988	132.1	140.5	142.4	141.0	142.0	144.0	141.6	142.0	141.7	140.7	140.8	139.1	140.3
1989	136.4	127.7	126.5	126.5	131.7	139.2	140.6	140.3	134.0	131.6	123.1	121.7	131.6
1990	137.6	162.4	162.9	159.9	159.7	160.0	160.4	160.8	149.8	147.2	120.9	117.8	150.0
1991	114.4	114.4	111.7	111.7	110.1	111.0	111.0	107.5	107.4	115.4	127.1	131.5	114.4

[1] Packer to wholesale distributor, or retail chain store, f.o.b. plant. *Source: Bureau of Labor Statistics (0242–0301)* T.454

Average Price of Oranges (Equiv. On-Tree) Received by Growers In Dollars Per Box

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	7.72	7.20	7.12	7.36	7.39	7.11	6.19	5.49	5.78	4.86	5.85	4.89	6.41
1986	4.20	4.01	4.07	3.76	4.24	4.18	3.58	3.91	4.59	6.50	6.46	4.79	4.52
1987	4.64	4.80	4.96	5.40	5.99	6.40	6.02	5.41	7.43	10.43	9.10	6.35	6.41
1988	6.43	6.59	6.87	7.76	8.79	8.78	6.47	5.44	5.56	3.39	6.15	6.76	6.58
1989	6.51	6.45	6.26	7.29	8.39	8.51	7.27	6.52	6.54	6.29	6.28	5.75	6.84
1990	5.92	5.82	6.01	6.48	7.01	6.78	5.98	4.62	4.71	5.31	6.44	6.31	5.95
1991	6.35	6.81	7.48	7.66	8.34	16.76	16.09	20.81	11.09	5.91			

Source: Economic Research Service, U.S.D.A. T.453

Palm Oil

Palm oil remains the second leading vegetable oil in terms of world production. The USDA forecast 1991/92 output at 11.9 million tonnes, up nearly 8 percent from the previous season. Production is dominated by Malaysia and Indonesia, which together account for almost 80 percent. Malaysia's crop, pegged at 6.6 million tonnes, rose by almost 10 percent from the year before. The country's palm oil production has been increasing for almost two decades; however, trees appear to be under stress from the high output. Indonesia has planted new trees in recent seasons, and as these come into production, that country's palm oil output should approach 3 million tonnes. Nigeria's production was estimated at 630,000 tonnes in 1991/92.

Palm oil accounts for almost 20 percent of world vegetable oil use. Consumption has increased with the rise in production and was forecast to reach 11.9 million tonnes in 1991/92, 8 percent more than the previous season. Major consumers include China, India, Pakistan and Bangladesh. Palm oil continues to find acceptance in Europe and the Soviet Commonwealth. Pakistan, a major importer, has cut back its purchases because of financing constraints. Among the major importers of palm oil are China, the Netherlands, Germany and Egypt. The former Soviet Union was forecast to take about 250,000 tonnes in 1991/92, and U.S. imports were expected to be 140,000 tonnes. Countries viewed as potentially larger markets are Vietnam, South Korea, Saudi Arabia, and the new Soviet states (particularly if credit is available).

World palm oil exports in 1991/92 were expected to total 7.7 million tonnes, up 3 percent from the prior season. Palm oil continues to be priced at a steep discount to competing oils, like soy, and is the most widely traded vegetable oil worldwide, with a market share of 38 percent. Malaysia was projected to export 5.6 million tonnes in 1991/92, up slightly from the previous year.

World Palm Oil Statistics In Thousand Metric Tons

	Production									Exports							
Crop Year	Malaysia	Colombia	Ecuador	Indonesia	Ivory Coast	Papua N. Guin.	Zaire	Nigeria	World Total	Malaysia	Indonesia	Ivory Coast	E.C.-12	Singapore	Netherlands	Papua N. Guin.	World Total
1985–6	4,773	141	110	1,280	217	125	160	600	8,056	4,065	759	94	169	719	101	120	5,360
1986–7	4,560	148	97	1,300	227	145	150	650	7,960	4,051	637	120	171	563	85	135	5,173
1987–8	4,852	176	111	1,370	198	145	145	640	8,364	4,267	859	65	158	456	76	135	5,554
1988–9	5,636	231	121	1,700	203	160	130	600	9,568	4,710	868	52	195	617	103	140	6,033
1989–90	6,412	232	135	2,250	275	160	123	500	10,922	5,520	968	144	213	700	170	140	7,264
1990–1[1]	6,033	267	138	2,400	280	155	119	600	10,889	5,300	980	148		700	190	140	7,079
1991–2[2]	6,600								11,910	5,675							7,000

[1] Preliminary. [2] Projected. *Source: Economic Research Service, U.S.D.A.* T.457

Palm Oil—U.S. Supply & Distribution In Millions of Pounds

				Utilization								Prices		
	Supply			Food Uses										
Year Begin. Oct.	Imports	Stocks Oct. 1	Total Supply	Shortening	Margarine	Salad or Cooking Oil	Other	Total	Non–Food Uses	Total Disappearance	Exports (& Shipments)	Palm Kernel Oil ¢ Per Pound	U.S. Ports C.I.F. ¢ Lb. (Cal. Yr.)	Malaysia[2] U.S. $ Metric Ton
1985–6	611	53	664	304				364		590	0		27.2	274
1986–7	475	74	549	247				279		507	0		14.4	310
1987–8	362	40	401	173				198	45	342	0		17.3	402
1988–9	298	60	357	151				205	43	315	4		21.4	358
1989–90[1]	249	39	288	124				94		254	4		17.9	271
1990–1[3]	309	29	338							304	25		14.5	323
1991–2[3]	310	29	339							305	4		16.1	337

[1] Preliminary. [2] Malaysia FOB; RBD. [3] Estimate. *Source: Economic Research Service, U.S.D.A.* T.458

Average Wholesale Palm Oil Prices, CIF, Bulk, U.S. Ports In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	19.5	19.0	18.8	19.8	20.7	19.5	20.6	26.2	30.6	31.1	32.0	37.5	24.6
1984	40.5	38.2	36.6	37.0	43.0	36.3	28.2	28.4	30.3	28.3	32.4	29.8	33.3
1985	28.3	29.0	29.5	34.3	34.6	31.6	28.7	25.1	23.5	21.7	19.9	19.7	27.2
1986	18.4	15.6	13.3	14.3	14.1	14.1	13.2	12.1	11.7	14.6	16.1	15.3	14.4
1987	16.97	17.60	16.90	16.95	16.85	17.13	16.01	16.12	17.19	17.30	17.76	21.05	17.32
1988	24.71	22.56	19.36	19.93	20.67	22.83	24.21	20.95	20.34	20.13	20.90	20.11	21.39
1989	19.27	19.45	19.20	18.79	20.37	20.26	18.88	15.31	15.82	16.10	16.05	15.16	17.89
1990	15.14	13.94	14.53	14.68	13.91	14.98	14.16	15.04	14.63	15.21	16.24	15.73	14.84
1991	19.49	19.50	19.25	19.18	19.05	19.40	20.32	19.14	18.86				

Source: Economic Research Service, U.S.D.A. T.459

Paper

Output of paper and paperboard products in the U.S. grew only slightly in 1991, as the slow economy stifled demand. Domestic paper mills were operating at about 90 percent of capacity midyear, compared with 93 percent a year earlier, while paperboard mills ran at 92 percent, against 95 percent the year before. Domestic shipments of primary paper and board products increased by 0.5 percent during the year. Profits of U.S. paper and board companies declined, especially for those in the printing and writing paper sector.

U.S. newsprint production expanded in 1991, even though domestic demand fell by nearly 9 percent. The increase in output occurred mainly because of a 5 percent decline in imports of newsprint. Recycling technology for newsprint continued to improve with better deinking equipment. The Commerce Department estimated that during the 1989-92 period, a total of 1 million tonnes of domestic deinking capacity for newsprint would come on line.

U.S. exports of paper and paperboard were very strong in 1991, increasing by about 15 percent to 6 million tonnes. Over half of all printing and writing paper exports went to Canada, while Mexico, the EC, and Southeast Asia were other destinations. Canada is also a large supplier of printing and writing paper to the U.S.

Shipments of (Paper Products) Shipping Containers[1] In Millions of Square Feet Surface Area

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	22,918	20,230	22,028	22,871	22,595	21,545	22,257	23,441	22,300	25,838	21,003	19,889	267,453
1986	24,531	21,700	22,479	25,290	23,340	23,495	23,949	23,821	24,491	27,256	21,506	22,012	283,921
1987	24,857	22,811	24,851	25,631	23,670	25,490	25,419	25,058	25,898	27,755	23,357	23,161	297,827
1988	24,782	24,742	27,327	26,132	25,036	25,920	24,560	27,091	26,153	27,797	24,876	23,467	308,509
1989	26,444	24,086	26,919	26,367	26,934	26,753	24,654	27,837	25,441	28,982	25,349	23,202	313,398
1990[2]	27,605	24,182	26,698	26,679	27,398	26,330	26,494	28,115	25,410	30,756	24,955	21,412	318,102
1991[2]	27,440	24,137	24,495	28,033	26,967	25,739	27,968	28,297	27,169	31,334			

[1] Corrugated & solid fiber. [2] Preliminary. *Source: National Paperboard Association* T.463

Index Price of Coated Printing Paper, No. 3 (Dec. 1982 = 100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	116.1	116.1	116.4	115.7	115.5	115.5	115.5	115.9	116.1	119.9	120.4	120.2	116.9
1988	120.9	121.2	122.2	121.8	122.0	122.0	124.0	126.3	127.5	127.5	127.7	127.8	124.2
1989	127.8	127.8	129.3	130.3	130.5	130.7	130.5	130.5	130.3	130.2	130.3	130.1	129.9
1990	130.3	130.2	130.2	130.3	130.3	130.3	130.2	130.2	130.2	130.2	130.2	130.2	130.2
1991[1]	129.4	129.4	129.4	129.1	128.7	127.9	127.9	128.7	128.1				

[1] Preliminary. *Source: Bureau of Labor Statistics* (0913–0113) T.470

Salient Statistics of Newsprint in the United States and Canada In Thousands of Metric Tons[3]

	United States													Canada		
			Imports[3] By Countries of Origin									Stocks, Dec. 31				
Year	Production	Exports	Canada	Finland	Italy	Norway	Sweden	U.K.	South Africa	Total	Consumption	At Mills	At Publishers[2]	Production	Exports	Stocks At Mills
1984	5,025	258	7,688	31		63	86			7,899	11,431	60	874	9,013	8,133	298
1985	4,924	279	6,674	42	23	71	119	17	34	8,472	11,587	57	910	8,988	7,964	290
1986	5,107	337	6,735	24	1	80	135	11	39	8,589	11,937	49	849	9,289	8,181	277
1987	5,300	284	7,087	22	14	57	221	26	21	8,975	12,322	36	900	9,669	8,574	189
1988	5,427	381	7,087							7,794	12,244	48	932	9,840	8,640	288
1989	5,523	485	6,799							7,678	12,241	56	749	9,640	8,513	321
1990[1]	5,997	427	6,423							6,587	12,127	46	802	9,068	7,943	315
1991[1]	6,206	571									11,517	98	799	8,835		536

[1] Preliminary. [2] Reporting only to A.N.P.A.; group represents about 75%. [3] Data for imports are in thousands of short tons.
Source: Newsprint Service Bureau, A.P.I. T.464

Producer Price Index of Standard Newsprint (1982 = 100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	102.6	102.8	102.7	102.6	102.7	102.3	102.4	102.0	102.1	105.7	105.7	105.6	103.3
1987	107.9	108.6	108.4	108.5	108.7	108.7	112.7	116.3	116.9	116.9	117.1	117.0	112.3
1988	127.1	127.9	127.9	127.7	127.9	127.9	127.8	127.7	127.8	127.7	127.5	126.6	127.6
1989	126.5	126.0	126.6	126.5	123.2	122.0	121.3	120.7	120.4	119.3	119.0	118.3	122.5
1990	116.8	115.4	115.6	115.5	116.6	121.6	122.2	122.2	121.8	122.5	122.3	122.7	119.5
1991[1]	126.8	127.2	127.1	121.7	121.4	120.1	119.5	118.5	118.0	116.6	116.4		

[1] Preliminary. *Source: Bureau of Labor Statistics* (0913–0291) T.468

U.S. Production & Consumption & Foreign Trade of Woodpulp In Thousands of Short Tons[6]

Year	Woodpulp Production							Consumption in the Manufacture of Paper and Board			All Grades Woodpulp		Inventories—Dec. 31			
		Sulfate													Woodpulp	
	Dissolving Pulp	Bleached	Paper Grades[2]	Unbleached	Groundwood	Semi-Chemical	Total Wood Pulp	Wood Pulp[4]	Waste Paper[5]	Pulpwood[6]	Exports	Imports	Pulp-Wood	Waste Paper	At Pulp Mills	At Paper & Board Mills
1985	1,174	——	43,696	——	5,251	4,027	54,147		15,623	85,744	3,794	4,466	5,046	969	650	492
1986	1,258	——	46,081	——	5,476	4,191	57,005		17,285	91,434	4,308	4,340	4,794	838	458	496
1987	1,312	——	48,293	——	5,702	4,246	59,552		17,993	93,946	4,727	4,531	5,096	920	394	529
1988	1,367	——	49,493	——	5,943	4,358	61,161		19,021	95,497	5,160	4,506	4,888	1,044	433	622
1989	1,425	——	50,181	——	6,029	4,363	61,998		19,490	98,414	5,653	4,673	5,462	1,095	535	519
1990	1,293	——	51,192	——	6,345	4,219	63,062		21,040	99,109						
1991[1]	1,370	——	51,989	——	6,448	4,095	63,836			90,236						

[1] Preliminary. [2] Chemical pulp. [3] Or exploded. [4] Does not include wood pulp consumption by plants classified outside paper & board industries. [5] Waste paper; straw; rags; cotton fibre; manila stock; etc. [6] Data for pulpwood expressed in thousands of cords of 128 cu. ft.—roughwood basis. Pulpwood includes slabs, chips, & millwaste. *Sources: Bureau of the Census; American Paper Institute.* T.465

Paper and Board Production in the United States In Thousands of Short Tons

Year	Paper							Paperboard				Construction[3]		
	Newsprint	Coated (Shipments)	Tissue Paper	Uncoated Free Sheet (Shipments)	Groundwood Paper Uncoated (Shipments)	Packaging & Industrial Converting[3] (Shipments)	All Paper Total	Other Bleached Paperboard	Corrugating Material	Unbleac. Kraft	All Paperboard Total	Construction (Paper)	All Construction Total	Total All Types
1984	5,025	6,249	4,921	9,510	1,565	3,666	34,447				34,039			
1985	4,924	5,875	4,941	9,952	1,521	3,403	33,996				33,034			
1986	5,107	6,263	5,095	10,681	1,540	3,303	35,510				35,379			
1987	5,300	6,860	5,301	11,206	1,498	2,840	36,876				37,442			
1988	5,427	7,359	5,476	11,277	1,624	2,800	38,352				38,103			
1989	5,523	7,171	5,636	11,097	1,741	2,681	38,266				38,519			
1990	5,997	7,430	5,802	11,479	1,868	2,377	39,359				39,423			
1991[1]	6,206	7,279	5,669	10,628	1,765	2,276	39,037				40,324			

[1] Preliminary. [2] Paper & board. [3] Unbleached kraft. *Source: Bureau of the Census* T.467

Index Price of Wood Pulp, Bleached Sulphate Softwood 1982 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	114.5	116.7	118.3	122.5	124.3	124.1	125.1	125.5	125.7	130.1	132.4	132.9	124.3
1988	138.6	143.7	144.4	149.3	151.0	154.8	159.9	161.3	161.5	163.0	165.7	167.5	155.1
1989	176.2	176.9	178.1	180.7	184.8	184.8	184.4	184.4	184.4	185.8	185.8	184.0	182.5
1990	183.2	183.0	180.9	179.3	177.1	174.9	174.5	173.5	173.5	170.2	170.9	170.4	176.0
1991[1]	152.2	150.0	147.7	142.1	136.8	132.4	126.0	123.7	123.5	120.0			

[1] Preliminary. *Source: Bureau of Labor Statistics* (0911–0211) T.469

Index Price of Shipping Sack Paper[1] 1982 = 100[2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	233.0	233.0	225.7	223.9	227.5	222.7	211.0	211.0	211.0	211.0	211.0	211.0	219.3
1986	211.0	211.0	211.0	218.0	218.0	218.0	218.0	218.0	218.0	226.8	234.9	234.0	219.7
1987[2]	110.1	113.2	114.0	117.3	117.3	117.3	117.3	117.3	120.4	121.7	125.0	125.4	118.0
1988	125.4	125.4	129.2	130.4	133.2	133.2	133.2	133.2	133.2	133.2	133.2	133.2	131.3
1989	133.2	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	143.5
1990	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	N.A.	N.A.	N.A.	N.A.	144.4
1991	148.9	148.9	148.9	148.9	148.9	148.9	148.9	148.9	148.9	148.9			

[1] Unbleached kraft. [2] Data prior to 1987 are for Dec. 1973 = 100. *Source: Bureau of Labor Statistics* (0913–0304) T.471

Index Price of Paperboard 1982 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	103.8	104.2	104.7	105.0	105.5	105.3	106.8	107.8	107.8	108.3	109.1	110.1	106.6
1987	113.9	115.5	115.5	116.2	115.8	115.9	116.1	119.8	121.3	122.1	122.5	123.1	118.1
1988	126.6	127.1	130.5	132.6	133.4	134.0	134.3	134.5	136.3	136.4	136.5	136.5	133.2
1989	137.7	138.7	140.4	142.3	142.5	141.0	139.5	140.0	139.7	139.8	139.7	140.0	140.1
1990	139.2	138.9	138.9	137.6	136.0	135.5	135.0	133.4	133.1	134.3	134.2	132.8	135.9
1991[1]	132.6	132.0	129.6	128.4	127.0	127.2	127.1	127.9	132.0	132.9	132.9		

[1] Preliminary. *Source: Bureau of Labor Statistics* (0914)

Peanuts and Peanut Oil

World production of peanuts in 1991/92 was forecast by USDA at 23.5 million tonnes, almost 3 percent more than the previous year. India, by far the largest producer, was expected to harvest 8.2 million tonnes, more than 1 percent above a year earlier. China's crop was slated to decline slightly to 6.1 million tonnes, while production in the U.S., Senegal, and Sudan was higher.

Trade in peanuts expanded slightly, and global exports were estimated at 1.4 million tonnes, about 3 percent above the year before. The major exporters were the U.S., China and Argentina. The world peanut crush was expected to increase, though barely. Peanut processing was estimated at 12.3 million tonnes, against 12.2 million a year earlier. India and China remained the largest processors. Global stocks of peanuts were forecast to rise sharply to 750,000 tonnes, 60 percent more than a year earlier.

With the increase in the crush, world peanut meal production was due to expand by 4 percent to over 5 million tonnes. Peanut meal exports, put at 670,000 tonnes, were up over 20 percent from the previous marketing year. India was a major exporter of peanut meal. European countries were among the largest meal importers. Consumption of meal was expected to be about the same as a year earlier at 5.2 million tonnes. World ending stocks of meal were forecast at 60,000 tonnes, down a small amount from the previous season.

Global peanut oil production in 1991/92 was pegged at 3.5 million tonnes, up less than 1 percent from a year earlier. World trade in peanut oil was estimated at 250,000 tonnes, down 4 percent, while consumption of oil held nearly steady at 3.6 million tonnes. Ending stocks of oil were to remain tight at 50,000 tonnes.

Peanut prices in Rotterdam fell significantly in 1991. During the October-December 1990 period, peanuts averaged $2,075 per tonne. By August-September 1991, the average price had fallen to less than $950 per tonne.

U.S. peanut production in 1991/92 was a record 4.94 billion pounds, a 37 percent increase from the previous drought-damaged crop of 3.6 billion. Plantings of almost 2 million acres were the largest in 40 years. Yields were a record in Texas, and yields rebounded in the Southeast. The year before, dry conditions were particularly damaging in Georgia. The 1992 national average yield was almost 2,520 pounds per acre, up 26 percent from a year earlier. Though carry-in stocks were small after the previous year's drought, supplies of peanuts in 1991/92 were burdensome at over 5.6 million pounds. Yet, prices were not expected to fall much, because of the price-support system which guarantees growers of quota peanuts a minimum price.

The 1991/92 domestic crush was put at over 830 million pounds, more than 20 percent above the year before. Peanut oil production was estimated at nearly 260 million pounds, while peanut meal output was forecast to be 175,000 tons. The U.S. is a dominant exporter of peanuts, shipping to Britain, the Netherlands and Canada. Exports were forecast at 825 million pounds, over 25 percent higher than a year earlier. The U.S. also exports small amounts of peanut oil, meal, and peanut butter.

Domestic use of peanuts for food purposes was projected to be 2.4 billion pounds, almost 20 percent above a year earlier. The main products made from peanuts in the U.S. are peanut butter, candy and snacks. Peanut butter accounts for about half of domestic food use, while candy takes 20 percent and snacks almost 25 percent.

U.S. ending stocks of peanuts in 1991/92 were forecast to be 1.3 billion pounds, about double the level the year before.

U.S. Government Program

For quota peanuts in the 1991 season, the price-support level was $642.79 per ton, compared with $631.47 a year earlier.

World Production of Peanuts (in the Shell) In Thousands of Metric Tons

Crop Year	Argentina	Brazil	Burma	China (mainland)	India	Indonesia	Mali	Nigeria	South Africa	Senegal	Sudan	Taiwan	Thailand	United States	Zaire (Congo)	World Total
1979–0	337	545	337	2,822	5,768	783	116	377	348	673	852	86	109	1,800	313	17,429
1980–1	243	310	431	3,600	5,005	791	92	530	309	521	707	82	129	1,045	320	16,271
1981–2	270	305	564	3,826	7,223	728	92	428	116	878	740	83	147	1,806	347	19,832
1982–3	250	250	541	3,916	5,282	795	80	396	89	1,109	497	63	145	1,560	357	17,435
1983–4	329	220	532	3,951	7,086	747	50	591	72	568	413	87	147	1,495	367	18,738
1984–5	270	337	667	4,815	6,436	755	45	500	196	560	390	89	172	1,998	375	19,683
1985–6	439	216	560	6,664	5,120	780	90	400	111	587	275	77	172	1,870	375	19,990
1986–7	518	195	544	5,882	5,875	750	90	400	235	817	350	83	169	1,677	380	20,383
1987–8	450	170	519	6,170	5,854	786	100	475	204	932	435	100	162	1,640	380	20,863
1988–9	243	140	438	5,693	9,000	840	115	350	230	690	450	95	170	1,806	380	23,243
1989–90[1]	400	170	410	5,950	6,790	875	90	450	170	770	390	100	162	1,760	380	21,340
1990–1[2]	480	150	450	6,370	8,080	880			140	670	330			1,630		22,880
1991–2[2]	400	150		6,100	8,200				140	700	400			2,240		23,510

[1] Preliminary. [2] Estimated. *Source: Foreign Agricultural Service, U.S.D.A.* T.474

Salient Statistics of Peanuts in the United States

Crop Year	Acreage Planted	Acreage Harvested For Nuts	Average Yield Per Acre In Lbs.	Production Picked and Threshed 1,000 Lbs.	Season Farm Price ¢ Lb.	Farm Value Million Dollars	Thousand Pounds (Yr. Beg. Aug.)			
	(1,000 Acres)						Exports		Imports	
							Unshelled	Shelled	Unshelled	Shelled
1977–8	1,545	1,512	2,456	3,715,055	21.0	780,869	64,284	705,032	413	148
1978–9	1,541	1,509	2,619	3,952,384	21.1	833,885	94,612	783,236	413	139
1979–0	1,546	1,520	2,611	3,968,485	20.6	819,276	64,810	745,828	424	140
1980–1	1,521	1,400	1,645	2,302,762	25.1	578,635	33,071	353,683	3,597	300,710
1981–2	1,514	1,489	2,675	3,981,850	26.9	1,069,526	77,998	374,812	6	4,632
1982–3	1,311	1,277	2,693	3,440,255	25.1	862,686	51,321	473,416	844	1,323
1983–4	1,411	1,374	2,399	3,295,530	24.7	814,579	39,509	529,949	298	1,715
1984–5	1,563	1,531	2,878	4,405,745	27.9	1,230,720	72,907	592,333	79	2,167
1985–6	1,490	1,467	2,810	4,122,787	24.3	1,003,412	83,747	721,690	1,493	1,942
1986–7	1,573	1,537	2,407	3,700,745	29.2	1,074,487	75,687	441,954	328	1,598
1987–8	1,567	1,546	2,341	3,619,440	28.0	1,021,900	76,346	407,557	880	1,069
1988–9[1]	1,657	1,628	2,445	3,980,917	27.9	1,115,200				
1989–90	1,665	1,645	2,426	3,989,995	27.8	1,123,500				
1990–1[1]	1,840	1,810	1,991	3,602,770	34.1	1,142,100				
1991–2[2]	2,042	2,008	2,513	4,935,250	29.0					

[1] Preliminary. [2] Estimate. *Source: Economic Research Service, U.S.D.A.* T.475

Peanuts Supply & Disposition (Farmers' Stock Basis) & Support Program in the United States

Crop Year Begin. Aug. 1	Supply				Disposition						Government Support Program				
								Food Use					Amount Put under Support		
	Production[3]	Imports	Stocks Aug. 1	Total	Exports & Shipments	Crushed for Oil	Seed, Loss & Residual	Military	Civilian	Total Disappear.	Support Price	Additional	Quantity Mil. Lbs.	% of Prod.	Owned by CCC July 31 Mi. Lbs.
	Million Pounds										¢ per lb.				
1978–9	3,952	1	581	4,534	1,141	527	521	—	1,759	3,948	21.00	12.5	515	12.9	—
1979–0	3,968	1	586	4,555	1,057	571	522	—	1,777	3,927	21.00	15.0	709	17.9	—
1980–1	2,303	401	628	3,332	503	446	505	—	1,465	2,919	22.75	12.5	337	14.6	—
1981–2	3,982	2	413	4,397	576	573	795	—	1,696	3,640	22.75	12.5	835	20.9	2
1982–3	3,440	2	757	4,199	681	342	463	—	1,849	3,335	27.50	10.0	539	15.7	—
1983–4	3,296	2	864	4,162	744	387	564	—	1,856	3,551	27.50	9.3	367	11.1	—
1984–5	4,406	2	611	5,019	860	625	199	—	1,911	3,595	27.50	9.3	1,370	30.9	—
1985–6	4,123	2	1,424	5,549	1,043	812	826	—	2,023	4,704	27.95	7.4	1,359	33.0	—
1986–7	3,701	2	845	4,544	663	514	291	—	2,073	3,541	30.37	7.5	290	7.8	—
1987–8	3,620	2	1,003	4,621	618	560	539	—	2,071	3,788	30.37	7.5	700	19.3	—
1988–9	3,981	2	833	4,816	688	814	217	—	2,254	3,973	30.76	7.5	540	13.6	—
1989–90	3,990	2	843	4,835	989	624	209	—	2,312	4,134	30.79	7.5			
1990–1[1]	3,603	27	701	4,331	652	689	286	—	2,020	3,647	31.57	7.5			
1991–2[2]	4,935	2	683	5,621	825	832	264	—	2,400	4,321	32.14	7.5			

[1] Preliminary. [2] Estimate. [3] Production is on a net weight basis. *Source: Economic Research Service, U.S.D.A.* T.476

U.S. Production of Peanuts (Harvested for Nuts) by States In Millions of Pounds

Crop Year	Alabama	Arkansas	Florida	Georgia	Louisiana	Mississippi	New Mexico	No. Car.	Oklahoma	So. Car.	Tennessee	Texas	Virginia	U.S. Total
1978	551.8	—	182.1	1,725.3	—	13.1	24.1	465.4	207.0	35.7	—	436.5	311.6	3,952
1979	584.9	—	179.9	1,704.8	—	12.4	25.3	378.5	264.0	32.3	—	533.0	253.5	3,968
1980	265.0	—	143.0	994.6	—	7.5	22.4	291.3	140.2	14.3	—	293.3	129.8	2,303
1981	602.7	—	178.0	1,655.5	—	12.7	24.9	555.6	189.3	39.0	—	393.3	330.8	3,982
1982	522.2	—	153.0	1,517.5	—	—	25.2	417.2	174.6	30.0	—	325.1	275.5	3,440
1983	454.5	—	166.8	1,568.0	—	—	25.6	318.3	176.5	25.0	—	362.3	198.6	3,296
1984	648.6	—	246.4	2,160.0	—	—	32.2	449.5	189.0	39.2	—	371.3	269.7	4,406
1985	590.0	—	216.0	1,921.3	—	—	32.0	452.0	171.0	34.2	—	422.6	283.7	4,123
1986	494.9	—	233.2	1,632.6	—	—	28.7	440.4	184.5	25.5	—	385.0	275.9	3,701
1987	465.3	—	215.8	1,575.0	—	—	33.5	392.2	222.8	31.2	—	441.0	243.0	3,619
1988	561.7	—	228.6	1,801.6	—	—	30.6	420.0	225.0	32.1	—	417.5	263.9	3,981
1989	537.8	—	214.9	1,849.5	—	—	43.7	370.1	210.7	32.5	—	484.7	246.2	3,990
1990	386.6	—	233.1	1,347.5	—	—	50.0	475.6	235.3	30.1	—	534.7	309.9	3,603
1991[1]	658.9	—	259.6	2,247.3	—	—	49.5	467.8	246.1	35.0	—	666.3	313.6	4,944

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.477

PEANUTS AND PEANUT OIL

U.S. Peanut Oil Utilization by Uses In Millions of Pounds

Yr. Begin Oct. 1	Baking or Frying Fats	Total Edible	Yr Begin Oct. 1	Baking or Frying Fats	Total Edible
1982–3	162	174	1987– 8	N.A.	181
1983–4	120	131	1988– 9[1]	175	175
1984–5	N.A.	118	1989–90[1]	152	167
1985–6	N.A.	137	1990– 1[1]	129	N.A.
1986–7	N.A.	151	1991– 2		

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.*

Supply and Reported Uses of Shelled Peanuts and Products in the U.S. In Millions of Pounds

							Reported Used (Shelled Peanuts—Raw Basis)								
							Edible Grades Used in								
							Peanut								
Year Begin. Aug. 1	Stocks Aug.1		Shelled Peanuts Production		Imp-orts	Ex-ports									
	Edible	Oil Stock	Edible	Oil Stock			Candy	Salted	Sand-wich Spread	Butter[5]	Other Products	Total	Roast-ing Stocks	Oil Stock Crushed For Oil, Cake & Meal	Appar. Disap. (Cleaned in Shell)
1980–1	371.7	29.5	493.3	286.9	300.7	353.7	237.9	205.5	24.1	588.6	19.7	1,076	90.8	335.5	120.3
1981–2	268.3	10.4	2,088	387.8	4.6	374.8	255.9	278.0	22.7	653.7	15.3	1,225	122.7	431.5	200.7
1982–3	450.4	20.6	1,887	283.1	1.3	473.4	284.2	308.1	21.9	677.6	17.0	1,309	155.9	256.4	206.4
1983–4	537.9	19.2	1,776	342.5	1.7	529.9	298.1	302.0	24.3	671.4	15.5	1,311	133.8	291.1	173.0
1984–5	402.4	33.1	2,415	422.0	2.2	592.3	290.3	309.1	26.2	697.1	19.2	1,342	139.1	470.3	211.9
1985–6	860.5	30.4	2,238	496.9	1.9	721.7	313.8	358.5	24.6	701.3	23.5	1,422	152.3	610.9	234.6
1986–7	559.3	4.7	2,123	299.7	1.6	442.0	321.2	384.3	33.9	679.4	41.1	1,460	139.4	386.4	215.1
1987–8	683.6	21.3	2,015	301.4	1.9	407.6	325.6	373.8	45.8	701.4	37.8	1,484	111.5	421.2	187.9
1988–9[1]	565.8	22.6	2,095	406.6	2.1	437.9	326.9	381.5	— 860.3 —		36.0	1,605	132.3	612.2	237.4
1989–90[1]	513.7	44.4					330.2	392.8	— 897.3 —		36.7	1,657			
1990–1[1]							305.3	355.3	— 742.4 —		37.9	1,441			

[1] Preliminary. [2] Includes in transit, exports and domestic use, except for oil stock for which disappearance is assumed to equal crushings. [3] Graded & ungraded oil stock only. [4] Relates to peanut oil mills only. [5] Peanuts used in peanut butter by mfrs. for own use in candy is included under peanut candy. *Source: Statistical Reporting Service, U.S.D.A.* T.481

World Peanut Oil Salient Statistics In Thousands of Metric Tons

Crop Year	Production				Imports		Exports				Consumption					Ending Stocks Total
	Bur-ma	China	India	Total	EC–12	Total	Arg-entina	China	Sen-egal	Total	Bur-ma	China	EC–12	India	Total	
1983–4	136	490	1,608	2,926	279	343	30	49	92	295	136	441	254	1,608	2,970	46
1984–5	171	632	1,520	3,028	244	313	28	40	42	274	171	592	227	1,520	3,085	31
1985–6	143	871	1,221	2,956	238	300	33	80	81	330	143	794	212	1,221	2,887	70
1986–7	139	754	1,360	3,101	260	328	77	80	100	356	139	679	233	1,360	3,082	61
1987–8	133	805	1,363	3,099	293	359	44	30	125	306	133	776	270	1,363	3,170	43
1988–9	94	748	2,080	3,679	265	320	21	8	90	211	94	743	221	2,080	3,769	62
1989–90	90	696	1,790	3,328	233	293	28	5	105	225	90	695	211	1,790	3,408	50
1990–1[1]	97	764	1,650	3,249	230	305	35	5	92	217	97	779	205	1,650	3,343	44
1991–2[2]				3,550		330				260					3,600	60

[1] Preliminary. [2] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.482

Production, Consumption, Stocks and Foreign Trade of Peanut Oil in the U.S. In Millions of Pounds

Crop Yr. Begin. Oct.	Production		Consumption		Stocks—Sept. 30		Imports for Con-sumption	Exports	
	Crude	Refined	In Refining	In End pdt's.	Crude	Refined		Crude	Refined
1979	183.0	130.1	134.3	120.4	22.6	7.3		14.4	1.2
1980	182.4	170.6	166.7	165.3	7.5	4.3		46.0	1.6
1981	141.6	122.8	133.5	115.3	12.9	5.2		38.1	2.7
1982–3[1]	N.A.	168.8	183.9	174.0	N.A.	3.9	3.8	4.5	.5
1983–4	N.A.	139.6	148.4	132.9	17.9	4.0	1.9	5.1	.4
1984–5	138.2	119.9	124.6	N.A.	9.6	4.8	.9	33.4	1.5
1985–6	N.A.	139.7	145.7	N.A.	64.9	4.0	.5	78.0	—
1986–7	144.2	160.0	169.0	153.2	17.0	3.6	2.4	5.5	.8
1987–8	144.6	199.6	207.5	179.3	10.9	3.8	2.2	4.7	2.0
1988–9[2]	N.A.	185.5	192.4	N.A.	18.6	4.4		—— 12.6 ——	
1990–1[2]	N.A.	212.5	229.1	N.A.	17.6	4.1			

[1] Data prior to 1982–83 are for the calendar years. [2] Preliminary. *Source: Bureau of Census* T.483

Average Price Received by Producers in U.S. for Peanuts in the Shell In Cents Per Pound

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average[1]
1978–9	21.2	20.8	21.4	21.0	20.8	21.2	—	—	—	—	—	—	21.1
1979–0	—	21.4	20.3	20.4	20.4	20.4	—	—	—	—	—	—	20.6
1980–1	—	22.5	23.2	27.9	37.3	47.7	—	—	—	—	—	—	25.2
1981–2	25.7	28.9	26.7	25.1	25.8	24.9	—	—	—	—	—	—	26.8
1982–3	27.1	25.1	24.9	25.3	26.1	22.9	—	—	—	—	—	—	25.0
1983–4	—	25.2	24.3	24.5	26.0	27.8	—	—	—	—	—	—	24.6
1984–5	—	29.9	27.1	25.6	26.3	—	—	—	—	—	—	—	27.9
1985–6	24.7	24.4	24.3	24.6	23.3	20.6	—	—	—	—	—	—	24.4
1986–7	29.6	27.0	28.8	29.8	32.5	24.5	—	—	—	—	—	—	29.2
1987–8	29.7	29.2	27.9	27.4	27.6	28.5	—	—	—	—	—	—	28.0
1988–9	20.0	29.9	28.0	26.4	25.8	27.8	—	—	—	—	—	—	27.9
1989–90[2]	28.4	28.2	27.7	26.9	28.2	24.6	—	—	—	—	—	—	27.8
1990–1[2]	26.5	32.2	34.0	40.1	43.6	44.8	—	—	—	—	—	—	34.1
1991–2	30.4	29.3	28.1	24.4									

[1] Weighted average by sales. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.479

Crude Peanut Oil Produced[2] in the United States In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1979	11.7	14.2	22.5	18.6	23.0	15.5	8.2	10.8	4.5	4.5	6.1	7.7	183.0
1980	6.2	15.1	16.7	25.9	30.7	22.9	23.5	21.2	5.9	2.1	6.3	5.9	182.4
1981	6.1	6.0	10.5	17.3	19.1	19.5	13.6	9.8	5.3	9.7	12.0	12.7	141.6
1982	11.3	11.1	19.4	26.3	22.3	19.0	15.0	11.8	N.A.	N.A.	N.A.	N.A.	N.A.
1983	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1984	12.1	13.3	10.8	12.5	10.1	8.9	5.1	5.3	4.3	9.9	8.6	7.3	108.2
1985	9.8	13.9	15.8	15.5	14.5	12.4	10.4	10.0	10.1	9.2	10.2	14.9	146.7
1986	19.2	21.1	19.9	20.8	24.0	26.4	14.2	9.6	N.A.	4.1	11.9	10.7	181.9
1987	9.8	13.6	20.5	11.6	17.8	15.8	14.5	9.7	4.2	7.5	13.7	13.1	151.8
1988	13.8	14.9	10.1	8.3	19.5	12.5	17.0	11.4	2.8	9.7	17.0	18.4	155.4
1989	10.5	20.8	27.8	24.3	19.0	33.4	26.6	22.4	N.A.	7.4	11.6	9.8	213.6
1990	11.1	15.8	14.2	22.2	24.9	24.1	14.0	8.5	2.1	14.4	12.5	15.9	179.7
1991[1]		70.8			71.1								

[1] Preliminary. [2] Not seasonally adjusted. *Source: Statistical Reporting Service, U.S.D.A.* T.473

Average Price of Domestic Crude Peanut Oil (in Tanks) F.O.B. Southeast Mills In Cents Per Pound

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
1979–0	34.4	31.1	29.5	25.9	25.8	22.9	20.5	22.4	23.1	26.9	33.2	36.0	27.6
1980–1	35.8	48.7	49.1	47.7	39.3	34.1	34.0	37.1	38.0	38.1	43.2	40.3	40.5
1981–2	34.5	34.5	30.9	27.3	31.4	23.3	29.1	29.9	26.2	24.7	22.7	22.5	28.1
1982–3	22.9	25.2	26.1	25.6	25.7	24.1	25.1	26.4	26.4	26.7	30.7	50.5	28.0
1983–4	50.7	48.8	48.1	47.3	46.5	48.4	52.6	58.2	59.1	57.7	54.8	39.2	47.3
1984–5	36.7	41.2	41.4	39.2	38.8	40.3	49.6	46.2	40.7	39.7	37.6	33.9	40.4
1985–6	38.3	42.2	36.1	29.5	22.6	21.5	24.4	27.6	28.0	27.5	30.5	28.3	29.7
1986–7	27.80	29.80	26.50	25.10	25.00	23.75	24.00	26.15	25.68	25.27	24.61	26.74	25.87
1987–8	33.48	31.50	32.10	35.73	32.40	29.61	29.50	30.02	34.00	39.80	37.86	36.00	33.50
1988–89	42.50	36.75	34.25	26.50	25.09	29.98	32.39	36.25	39.80	—	35.75	34.40	33.97
1989–90	39.06	41.50	41.60	43.25	46.00	43.40	41.25	45.25	46.90	46.88	49.05	51.13	44.61
1990–1	48.13	44.20	43.00	41.00	42.83	47.60	46.75	43.33	42.25	41.50	35.33	30.60	42.21
1991–2													

Source: Agricultural Marketing Service, U.S.D.A. T.485

Pepper

Pepper prices continued to decline in early 1991, falling to levels in New York last seen in 1983/84. Prices peaked in early 1988, when Indonesian black pepper was quoted at $2.50 a pound, while white pepper touched $3.00. As a result of those high prices, more acreage was planted to pepper, and that land is now beginning to yield larger crops.

Most of the statistical data on pepper are lagged; however, certain trends are evident. The primary one is that many of the major growers have had larger crops. The chief producers are Indonesia, India, Malaysia, and Brazil, which together account for about 90 percent of world output. Thailand, Sri Lanka, and Madagascar are other producers. India's 1989/90 crop was 60,000 tonnes, exceeding the previous season by about 15,000 tonnes because of a better monsoon. The 1990/91 crop was estimated at 55,000 tonnes. Malaysia has emerged as a major grower, with a 1991 crop estimated at 30,000 tonnes, about the same as a year earlier. Malaysian pepper is grown primarily on the island of Borneo. Indonesia has surpassed India as the world's leading producer by planting more acreage. Indonesian exports have been large, indicating sizable crops.

Brazil's production in recent seasons has been hampered by poor weather, reduced yields in mature production areas, and high costs. Due to continuing economic uncertainty, Brazilian farmers preferred to plant crops which were less capital intensive than pepper.

The major exporter of black and white pepper was Indonesia, which shipped over 40,000 tonnes in 1989. Malaysia was second, with 1989 shipments of about 29,000 tonnes. Brazil exported about 28,500 tonnes that year, while India's shipments were 25,000.

In past seasons, India's exports have gone to the former USSR and Eastern Europe, though that business may have declined in 1991. India has been exporting more pepper to the U.S. recently. Indonesia's major markets are the U.S., Japan, and EC countries. Malaysia exports pepper to Singapore, while Brazil markets to the U.S. and Europe. Singapore and Hong Kong import pepper for re-export.

Among the chief importers are the U.S., the former USSR, Germany, and France. U.S. imports of black pepper in 1990 were 33,000 tonnes, versus 32,000 in 1989. Brazil supplied the U.S. with nearly 9,000 tonnes, and Indonesia provided over 8,000. U.S. imports of white pepper in 1990 were 5,700 tonnes, against 5,000 the year before, supplied mostly by Indonesia.

World Exports of Pepper (Black & White) and U.S. Prices

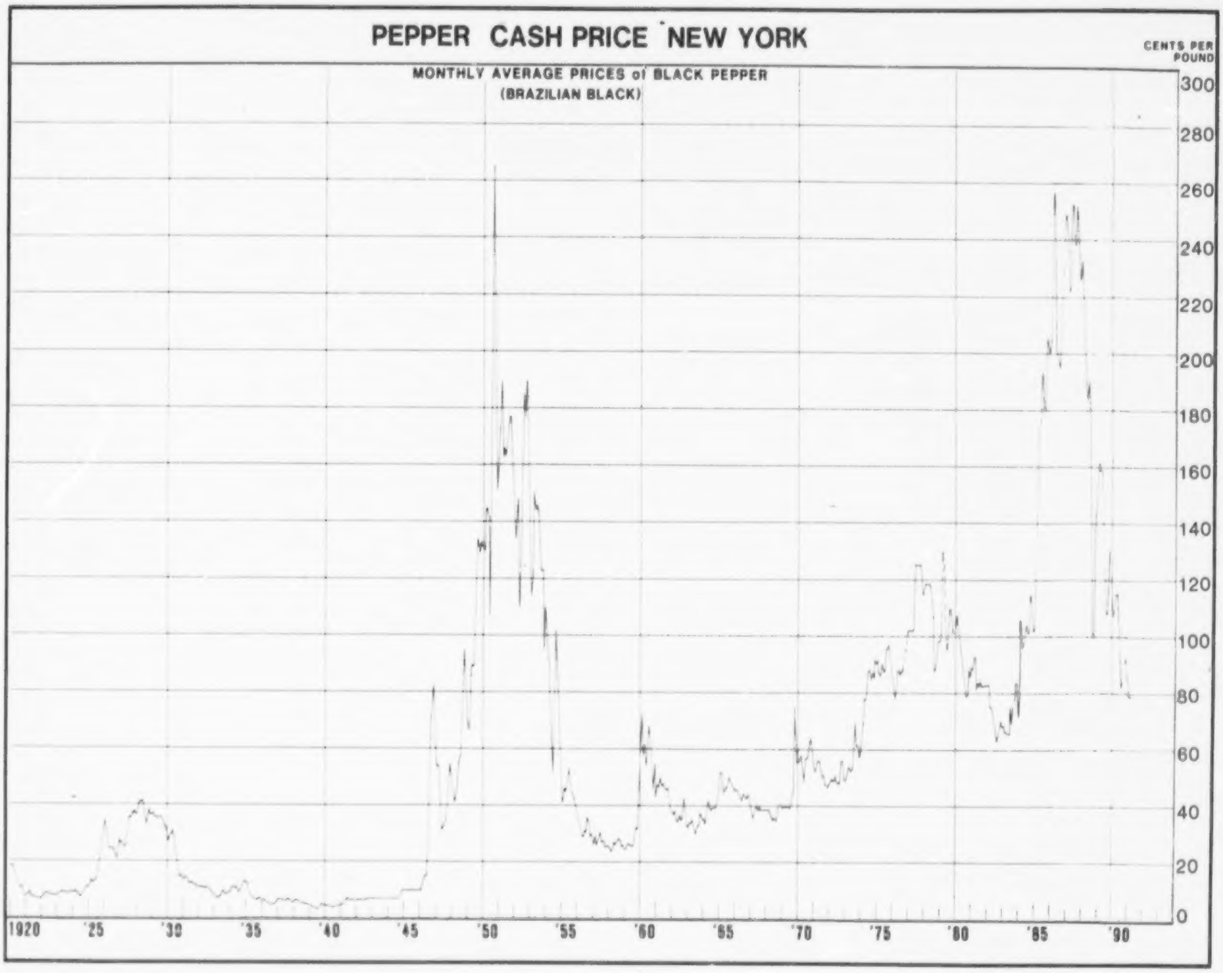
	Exports (metric tons)							New York Spot Prices (¢ per pound)					
								Indonesian		Brazilian		Indian	
Year	Brazil	India	Indonesia	Thailand	Madagascar	Malaysia	Sri Lanka	Lampong Black	Muntok White	Black	White	Malabar Black	Tellicherry[2]
1980	31,964	26,795	29,345		1,674	30,709	945	87.6	120.9	83.3	116.3	87.6	102.5
1981	46,895	18,636	33,996	45	1,440	28,696	2,042	68.8	101.5	62.3	100.0	80.4	103.8
1982	44,539	20,454	36,327	210	1,796	25,010	1,238	66.3	84.8	62.1	84.7	69.2	83.7
1983	30,363	27,982	45,061	1,014	2,802	23,481	1,120	72.1	96.7	65.5	96.2	76.0	86.5
1984	36,499	28,381	33,817	2,325	2,097	16,502	2,202	98.6	153.9	96.5	152.8	98.9	115.2
1985	24,676	19,538	26,202	1,785	2,002	19,070	1,260	169.6	190.6	167.4	190.4	169.6	185.3
1986	22,069	49,808	29,566	1,816	972	15,380	1,286	215.0	275.3	212.5	275.3	214.6	235.1
1987	26,260	32,971	29,995	1,477	1,851	14,185	2,014	237.1	267.7	235.9	267.7	236.0	262.8
1988	24,393	47,258	41,568	910	2,497	19,190	2,714	173.9	243.4	170.3		170.3	220.6
1989[1]	28,582	25,223	42,138	2,077	1,377	26,256	1,576	138.2	146.2	136.2		135.9	174.8
1990[1]								99.1	90.3	97.1		97.1	139.1

[1] Preliminary. [2] Extra. *Source: Foreign Agricultural Service, U.S.D.A.* T.486

United States Imports of Unground Pepper from Specified Countries In Metric Tons

	Black Pepper										White Pepper						
Year	Brazil	Mexico	Sri Lanka (Ceylon)	Spain	India	Indonesia	Malaysia	Singapore	China	Total	Brazil	China	W. Germany	Indonesia	Malaysia	Singapore	Total
1979	9,704		281	—	627	10,898	2,644	156	61	24,482	414	10	—	2,159	51	94	2,756
1980	10,075	131	3,194														
1981	14,716	75	2,503														
1982	14,887	10	172	—	848	11,620	172	63	3	27,811	423	1	5	2,194	—	95	2,721
1983	13,047	—	256	—	2,498	12,327	25	120	3	28,346	571	17	6	2,460	—	65	3,130
1984	10,369	3	158	34	4,024	9,814	131	322	378	27,421	246	260	10	3,805	100	100	4,762
1985	12,227	3	158	34	4,024	9,814	131	322	378	27,421	246	260	10	3,805	100	100	4,762
1986	9,416	7	255	1	20,976	5,980	634	120	243	38,063	134	171	7	2,846	65	140	3,578
1987	11,981	23	388	—	9,341	6,958	1,667	379	107	31,372	65	6	1	4,238	22	110	4,533
1988	6,033	119	344	—	7,481	11,131	1,400	104	14	26,939	20	2	25	4,169	12	26	4,326
1989	11,038	20	375	—	1,272	11,016	6,732	324	109	31,819	37	38	1	5,272	63	90	5,549
1990[1]	8,776	20	644	20	6,679	8,444	6,768	457	70	32,980	17	15	1	5,506	24	86	5,721

[1] Preliminary. *Source: Foreign Agricultural Service, U.S.D.A.* T.487



Average Black Pepper Prices in New York In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1974	64.0	70.0	78.0	78.0	85.0	88.0	88.0	85.0	87.5	85.5	92.0	91.0	82.7
1975	91.5	87.0	86.0	90.0	89.0	87.5	88.5	95.0	97.0	94.0	87.5	85.0	89.8
1976	81.0	79.0	77.5	88.0	88.0	87.0	87.5	87.5	N.A.	N.A.	N.A.	102.0	86.4
1977	102.0	102.0	102.0	102.0	125.0	125.0	125.0	125.0	125.0	125.0	114.5	N.A.	115.7
1978	118.5	118.5	118.5	118.5	117.5	109.0	107.5	88.0	88.5	95.5	98.5	98.5	106.4
1979	105.0	N.A.	130.0	N.A.	N.A.	95.0	97.0	110.0	108.0	108.0	102.0	101.3	106.3
1980	108.0	101.0	96.3	93.0	87.0	84.3	82.8	79.0	79.0	88.0	86.5	89.3	89.5
1981	88.5	93.3	92.0	81.0	83.0	82.3	84.0	82.5	82.3	82.3	82.5	82.5	84.7
1982	82.5	82.5	75.0	75.0	70.0	69.0	67.0	63.0	69.0	70.5	68.5	68.3	71.7
1983	68.3	66.5	66.3	65.5	65.5	65.5	75.0	69.3	76.3	77.3	83.5	83.5	71.9
1984[1]	99.5	96.5	89.4	93.9	96.4	96.2	89.3	94.8	104.0	110.5	100.0	97.5	96.5
1985	108.0	119.3	137.6	167.5	170.4	188.0	186.0	175.8	172.5	190.8	199.8	192.5	167.4
1986	197.6	210.5	250.0	206.0	198.2	193.8	193.8	190.8	204.8	226.0	232.0	246.2	212.5
1987	241.4	231.0	218.8	232.5	245.2	241.8	232.6	232.5	251.5	241.4	238.5	233.8	235.9
1988	233.3	228.8	210.5	190.3	184.3	190.5	182.8	141.5	100.2	99.5	138.2	143.0	170.3
1989	156.8	161.8	159.0	160.0	154.5	141.8	115.5	108.0	108.2	124.7	131.3	112.4	136.2
1990	107.0	110.8	115.4	115.0	106.0	91.0	82.3	85.8	88.5	92.3	89.6	81.8	97.1
1991	79.0	78.5	78.6										

[1] Brazilian black since 1984. *Source: Bureau of Labor Statistics (0289–0131); N.Y. Wall St. Journal; CRB; Foreign Agricultural Service, U.S.D.A.*

T.488

Petroleum

Iraq's August 2, 1990, invasion of Kuwait, which took 4.3 million barrels per day of oil out of production, dominated the petroleum market in the first quarter of 1991. However, its long-run effects on the market proved to be far less damaging than had been expected.

Within months of the invasion, Saudi Arabia and other OPEC producers had increased production to more than compensate for the Iraqi and Kuwaiti oil shut in by the U.N.'s trade embargo on Iraq. OPEC output in December 1990 averaged 24.4 million barrels per day, virtually unchanged from a year earlier, in spite of the embargo. Prices had already retreated from their October 9, 1990, all-time high of $40.40/bbl., basis West Texas Intermediate, and stood at about $32 when 1991 began.

Preparing for the worst, the 24 developed nations in the OECD had built their crude oil stocks to 3.569 billion barrels, equal to 97 days of consumption, by January 1, 1991. The war to liberate Kuwait began with a massive Allied air assault during the night of January 16. Iraq responded by setting more than 500 oil wells in Kuwait on fire, destroying perhaps 10 percent of that nation's petroleum reserves, and by dumping massive quantities of crude into the Persian Gulf. However, Saudi Arabia's oil fields were not threatened by the war. Instead of rallying, spot crude fell to $21 on January 17.

The U.S. held a sale of oil from the Strategic Petroleum Reserve on January 30, accepting 13 of the 26 bids for a total of 17.3 million barrels of the 33.8 million offered. The sale, announced during U.S. business hours on January 16, was intended both as a test of the SPR's ability to deliver oil and as a means of preventing panic in the oil market. But by the time the oil was delivered in February and March, the Gulf War was over, and demand for oil in the OECD was suffering from a lingering economic recession.

The OECD estimated that world crude oil demand was virtually unchanged in 1991 at 66.1 million bpd. OECD demand fell by 100,000 bpd to 37.8 million, and the former Soviet Union's consumption fell to 8.2 million bpd from 8.4 million. These declines were largely offset by gains in Asian consumption. Total crude supply was estimated at 66.6 million bpd. The OECD estimated 1991 ending stocks in OECD nations to be the same 97 days of consumption that were on hand at the start of the year.

Kuwait's success in capping the oil well fires and repairing its exporting infrastructure exceeded expectations, proving estimates that it could take up to two years to put out all the fires and repair the damage wrong by some 18 months. Kuwait expected to resume exporting at the pre-war rate of 1.5 million bpd by the end of 1992.

In the U.S., the downtrend in oil production in the lower 48 states continued in 1991. The American Petroleum Institute put 1991 production in the contiguous U.S. at 5.6 million bpd, the lowest since 5.4 million bpd in 1950. The API estimated that U.S. production was falling at an annual rate of 300,000 bpd. The Department of Energy put U.S. production, including Alaskan, at 7.373 million bpd for 1991, virtually unchanged from 7.355 million bpd a year earlier. However, much of that gain was attributed to pushing production to take advantage of higher prices following the invasion.

Futures Markets

Futures contracts on light sweet crude oil, heating oil, and unleaded regular gasoline are traded on the New York Mercantile Exchange, as are options on those contracts. On February 28, 1992, NYMEX began trading futures on light sour crude oil. Deliverable grades included West Texas Sour, Alaskan North Slope, and several international crudes of similar quality.

London's International Petroleum Exchange trades Brent crude oil futures and options on those futures. The IPE also trades heating oil futures and options (under the name gas oil) and unleaded gasoline futures. High-sulfur fuel oil futures are traded on the Simex in Singapore.

World Production of Crude Petroleum, by Specified Countries In Thousand Barrels Per Day

Year	Algeria	Canada	China	Libya	Iran	Iraq	Kuwait	Nigeria	Mexico	Indonesia	United Kingdom	USSR	Saudi Arabia	United States	Venezuela	World Total
1980	1,106	1,435	2,114	1,787	1,662	2,514	1,656	2,055	1,936	1,577	1,622	11,460	9,900	8,597	2,168	59,353
1981	1,002	1,285	2,012	1,140	1,380	1,000	1,125	1,433	2,313	1,605	1,811	11,552	9,815	8,572	2,102	55,778
1982	987	1,271	2,045	1,150	2,214	1,012	823	1,295	2,748	1,339	2,065	11,615	6,483	8,649	1,895	53,184
1983	968	1,356	2,120	1,105	2,440	1,005	1,064	1,241	2,689	1,343	2,291	11,684	5,086	8,688	1,801	52,967
1984	1,014	1,438	2,296	1,087	2,174	1,209	1,157	1,388	2,780	1,412	2,480	11,576	4,663	8,879	1,798	54,203
1985	1,037	1,471	2,505	1,059	2,250	1,433	1,023	1,495	2,745	1,325	2,530	11,250	3,388	8,971	1,677	53,646
1986	945	1,474	2,620	1,034	2,035	1,690	1,419	1,467	2,435	1,390	2,539	11,540	4,870	8,680	1,787	55,872
1987	1,048	1,535	2,690	972	2,298	2,079	1,585	1,341	2,548	1,343	2,406	11,690	4,265	8,349	1,752	56,306
1988	1,040	1,616	2,730	1,175	2,240	2,685	1,492	1,450	2,512	1,342	2,232	11,823	5,086	8,140	1,903	58,507
1989	1,095	1,560	2,757	1,150	2,810	2,897	1,783	1,716	2,520	1,409	1,802	11,420	5,064	7,613	1,907	59,568
1990[2]	1,205	1,547	2,765	1,375	3,088	2,040	1,172	1,834	2,553	1,462	1,813	10,715	6,449	7,355	2,137	60,361
1991[1]	1,210	1,585	2,798	1,470	3,320	257	123	1,940	2,680	1,620	1,761	9,658	8,108	7,389	2,360	59,685

[1] Estimate. [2] Preliminary. *Source: Energy Information Administration* T.489

United States Production of Gasoline[1] (Includes Aviation) In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	191.8	165.7	186.5	183.4	196.7	203.5	210.7	200.1	196.5	194.9	188.9	203.2	2,322
1983	188.7	164.3	183.7	186.7	199.0	200.6	208.8	203.7	199.3	192.7	199.7	196.1	2,323
1984	187.7	184.1	197.6	196.4	207.0	199.6	200.9	199.5	196.2	198.7	202.1	201.4	2,371
1985	184.2	166.2	189.0	191.1	204.3	204.2	211.5	212.3	189.8	197.8	195.2	206.7	2,352
1986	202.8	177.3	188.6	195.8	220.9	214.1	216.8	221.2	208.7	206.0	207.5	216.5	2,476
1987	208.9	178.8	204.2	206.0	217.5	213.7	219.2	215.9	208.6	207.5	207.7	218.1	2,506
1988	209.3	195.8	208.9	207.9	213.3	210.3	222.9	224.5	209.3	213.4	212.4	227.2	2,555
1989	215.6	186.7	205.7	205.2	215.8	219.2	229.0	222.8	213.0	213.0	212.1	213.9	2,551
1990[2]	214.0	196.0	205.6	203.6	205.4	213.4	224.9	227.8	218.3	213.9	208.9	214.0	2,548
1991[2]	206.1	184.6	206.4	202.8	219.8	221.4	226.7	225.7	212.1				

[1] Gasoline and naphtha from crude petroleum and natural gasoline used at refineries. [2] Preliminary. *Source: Bureau of Mines* T.502

United States Domestic Consumption of Gasoline In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	185.5	174.0	201.2	207.7	207.1	206.1	211.4	206.1	196.9	198.8	197.6	203.6	2,396
1983	187.8	168.9	212.5	194.4	205.8	210.8	210.7	216.0	202.8	205.2	198.8	212.9	2,427
1984	194.6	181.4	202.8	201.1	214.7	214.1	212.5	220.9	198.3	209.2	204.7	203.7	2,458
1985	197.5	185.0	207.4	209.6	219.7	210.8	218.3	225.6	199.8	214.6	203.7	211.4	2,503
1986	202.2	181.7	216.5	214.1	221.4	217.3	231.6	231.7	207.8	225.6	207.1	222.1	2,579
1987	203.2	190.9	216.7	220.2	232.2	227.1	235.9	228.4	216.9	227.2	215.1	225.3	2,639
1988	208.2	204.8	227.8	223.6	227.4	235.5	233.0	235.1	223.0	226.2	222.0	228.3	2,695
1989	209.4	199.1	230.8	215.4	230.7	234.2	227.1	240.5	218.0	227.0	221.4	230.3	2,684
1990[1]	207.5	200.3	227.8	214.2	227.3	225.3	230.8	241.8	208.2	224.7	217.8	216.9	2,650
1991[1]	206.4	191.1	219.1	214.8	232.5	224.8	235.1	235.4	213.5				

[1] Preliminary. *Source: Bureau of Mines* T.503

Stocks of Finished Gasoline[2] on Hand in the United States, at End of Month In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	215.9	211.2	200.7	181.0	175.6	179.5	185.0	187.6	193.3	194.6	191.9	196.8
1983	210.0	209.2	185.4	185.4	188.0	185.4	192.3	187.4	191.8	189.5	198.4	187.8
1984	188.0	199.3	204.8	209.7	212.7	206.5	202.2	188.3	196.5	195.5	201.2	207.9
1985	200.9	191.8	188.2	184.2	183.4	188.5	194.4	190.4	189.7	182.3	185.6	192.4
1986	203.2	207.8	186.2	176.0	189.8	197.8	192.0	189.7	198.5	187.0	193.0	196.4
1987	213.0	209.0	207.2	202.9	197.7	194.5	190.8	190.0	193.4	184.1	190.2	191.1
1988	203.1	205.1	196.4	192.1	190.8	176.7	181.2	185.4	184.6	182.3	185.8	192.0
1989	207.8	205.7	191.1	190.6	185.8	180.1	192.1	183.8	187.5	184.8	187.1	179.1
1990[1]	197.6	203.3	187.9	186.3	180.3	177.7	182.0	175.4	190.5	181.9	178.7	182.4
1991[1]	189.1	182.7	174.4	171.9	173.9	178.5	173.5	172.8	179.1			

[1] Preliminary. [2] Includes aviation. *Source: Bureau of Mines* T.504

United States Crude Oil[1] Supply & Disposition

	Supply												
	Field Production		Imports			Stock Withdrawal[3]			Disposition		Ending Stocks[2]		
Yearly Average	Total Domestic	Alaskan	Total	SPR[4]	Other	SPR[4]	Other	Unaccounted for Crude Oil	Refinery Inputs	Exports	Total	SPR[5]	Other Primary
	Thousands barrels PER DAY										Million barrels		
1984	8,879	1,722	3,426	197	3,229	195	4	185	12,044	181	796	451	345
1985	8,971	1,825	3,201	118	3,083	117	67	145	12,002	204	814	493	321
1986	8,680	1,867	4,178	48	4,130	50	28	139	12,716	154	843	512	331
1987	8,349	1,962	4,674	73	4,601	80	49	145	12,854	151	890	541	349
1988	8,140	2,017	5,107	51	5,055	52	−51	196	13,246	155	890	560	330
1989	7,613	1,874	5,843	56	5,787	56	30	200	13,401	142	921	580	341
1990	7,355	1,773	5,894	27	5,867	16	−51	258	13,409	109	908	586	323
1991[6]	7,372	1,799	5,791	0	5,791	−47	24	239	13,292	115	901	569	332

[1] Includes lease condensate. [2] Stocks are totals as of end of period. [3] A negative number indicates an increase in stocks and a positive number indicates a decrease. [4] Strategic Petroleum Reserve. [5] Stocks of Alaskan crude oil in transit were included beginning in January 1981. Stock withdrawals are calculated using new basis levels. [6] Preliminary. *Source: Energy Information Administration* T.489a

PETROLEUM

Crude Petroleum Refinery Operations Ratio[1] In Percent of Capacity

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	67	65	66	66	69	75	75	71	74	71	71	70	70
1983	68	65	66	70	72	75	75	74	78	73	75	70	72
1984	73	76	75	75	77	77	76	78	78	76	77	76	76
1985	74	74	74	76	78	79	81	78	77	79	80	81	78
1986	81	78	76	82	86	86	84	87	86	83	84	84	83
1987	82	80	79	81	82	85	87	87	86	83	82	84	83
1988	83	81	83	84	86	86	86	87	84	83	84	85	84
1989	86	83	84	84	86	90	89	89	88	86	86	84	86
1990[2]	88	88	84	85	87	89	93	91	91	84	84	83	87
1991[2]	83	84	83	85	87	90	89	89	88				

[1] Based on the ratio of the daily avg. crude runs to stills to the rated capacity of refineries per day. [2] Preliminary. *Source: Bureau of Mines*

T.496

Production of Major Refined Petroleum Products in Continental U.S. In Millions of Barrels

Year	Asphalt[2]	Aviation Gasol.	Fuel Oil Distillate	Fuel Oil Residual	Gasoline[4]	Jet Fuel	Kerosene	Natural Gas Plant Liquids	Lubricants	Liquefied Gases[3] Total	Liquefied Gases[3] at L.P.G.[5]	Liquefied Gases[3] at L.R.G.[6]
1983	135.7	9.2	896.5	310.9	2,323	373.2	40.0	588.2	53.8	599.2	479.6	119.6
1984	141.3	9.1	981.2	326.2	2,371	414.3	41.8	613.1	58.3	620.9	488.2	132.7
1985	146.3	9.3	980.9	322.0	2,352	433.9	34.5	607.5	53.1	622.0	479.3	142.6
1986	149.7	11.7	1,021.2	324.3	2,476	472.0	32.6	587.1	58.2	618.5	466.2	152.3
1987	158.4	9.1	996.6	323.2	2,506	490.1	28.7	605.6	60.9	638.2	474.5	163.7
1988	162.1	9.3	1,046.3	338.7	2,555	501.3	28.8	614.2	62.3	665.2	482.6	182.6
1989	154.9	9.2	1,152.2	500.1	2,684	543.6	30.8	586.1	58.1	653.5	451.3	202.2
1990	164.0	8.5	1,102.0	448.5	2,650	555.6	15.5	598.3	59.7	638.4	456.2	182.2
1991[1]	147.5	15.8	970.0	380.1	2,410	488.4	13.8	583.4	49.3	612.2	422.6	169.5

[1] Preliminary. [2] 5.5 barrels = 1 short ton. [3] Includes ethane & ethylene. [4] Finished (includes aviation). [5] Gas processing plants. [6] Refineries. *Source: Bureau of Mines*

T.490

Stocks of Petroleum & Products in the United States on January 1 In Millions of Barrels

Year	Crude Petroleum	Strategic Reserve	Refined Products Total	Asphalt[2]	Aviation Gasol.	Fuel Oil Distillate	Fuel Oil Residual	Finished Gasoline[6]	Jet Fuel	Kerosene	Liquefied Gases[3]	Lubricants	Motor Gasoline Total	Motor Gasoline Finished	Unfinished Oils (Net)[5]
1983	643.6	293.8	628.3	15.9	2.3	178.6	66.2	196.8	36.8	10.4	94.0	12.5			158.1
1984	722.9	379.1	569.2	18.8	2.3	140.3	48.5	187.8	38.6	7.9	100.6	12.1	222	186	161.5
1985	795.9	450.5	620.6	17.2	2.7	161.1	53.0	207.9	42.0	11.9	100.8	12.7	243	205	139.8
1986	814.2	493.3	556.6	21.2	2.1	143.7	50.4	192.4	40.5	7.5	73.5	11.8	223	190	148.0
1987	842.8	511.6	609.4	17.7	2.2	155.1	47.4	196.4	49.7	8.4	102.7	14.2	233	194	140.4
1988	889.6	540.6	579.5	18.8	2.3	134.5	47.4	191.1	49.9	8.4	97.1	13.3	226	189	138.3
1989	889.9	559.5	561.6	20.8	2.1	123.5	44.6	192.0	43.8	7.3	97.3	13.3	228	190	145.8
1990	921.1	579.9	508.3	20.6	2.1	105.7	43.8	179.1	40.9	5.1	80.2	13.8	213	177	152.0
1991[1]	916	586	566.8	18.7	1.7	132.2	48.6	182.4	52.1	5.6	97.9	12.4	221	182	145.4

[1] Preliminary. [2] 5.5 bbls. = 1 s. ton. [3] Includes ethane & ethylene at plants & refineries. [4] Estimate. [5] And misc. products. [6] Includes aviation. *Source: Bureau of Mines*

T.493

Stocks of Crude Petroleum[1] in the United States at Beginning of Month In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	643.6	660.4	669.4	666.8	678.9	679.4	683.0	675.8	700.5	707.7	716.2	712.7
1984	722.9	733.1	727.4	728.2	742.5	763.5	766.6	771.8	764.1	756.3	779.8	786.9
1985	795.9	793.5	781.6	791.2	806.8	828.6	820.6	810.5	805.6	806.6	803.6	812.4
1986	814.2	826.1	827.1	837.8	836.6	828.5	828.4	845.2	837.7	844.2	851.4	848.6
1987	842.8	847.9	848.6	852.4	850.9	849.8	854.8	853.8	864.4	871.1	891.5	902.2
1988	889.6	888.3	892.2	898.9	904.6	907.6	908.9	900.8	885.7	883.2	895.6	895.7
1989	889.9	894.8	896.6	892.5	907.4	915.7	903.0	907.6	916.3	912.0	914.3	930.5
1990[2]	921.1	932.9	924.0	955.9	953.1	968.7	970.9	966.2	959.2	932.7	935.7	924.7
1991[2]	908.4	905.8	912.8	905.3	907.2	927.0	916.1	911.0	913.8	909.6		

[1] Total gasoline-bearing in the U.S. [2] Preliminary. *Source: Bureau of Mines*

T.501

U.S. Production of Residual Fuel Oil In Millions of Barrels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	31.1	29.1	29.8	27.4	24.6	21.0	22.7	23.0	24.2	28.3	28.0	32.7	322.0
1986	29.1	24.0	25.2	28.0	28.3	24.6	26.3	27.8	25.6	25.6	29.2	30.6	324.3
1987	28.5	23.1	26.7	24.9	25.2	25.9	27.9	27.3	27.1	27.5	27.8	31.0	323.2
1988	31.1	28.8	29.4	28.8	26.7	26.4	28.1	26.9	25.5	26.4	27.5	33.1	338.7
1989	29.4	26.0	29.0	27.1	28.9	28.5	26.6	27.9	25.6	31.0	32.3	35.3	348.1
1990[1]	35.0	29.7	30.2	26.4	27.2	27.8	30.6	29.3	27.3	24.8	25.4	31.7	346.6
1991[1]	31.0	29.4	30.9	27.5	28.7	28.0	27.0	28.7	25.1				

[1] Preliminary. *Source: Bureau of Mines* T.505

Production[1] of Crude Petroleum in the United States In Millions of Barrels of 42 Gallons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	269.6	245.2	269.7	263.3	267.6	260.0	267.7	269.1	263.5	271.9	263.1	260.3	3,171
1984	274.9	257.4	268.8	265.9	277.6	265.6	275.4	273.1	269.8	276.1	269.4	275.8	3,250
1985	270.9	252.7	281.9	271.3	283.1	270.7	277.4	272.9	268.6	278.1	267.1	279.9	3,275
1986	283.2	256.9	279.4	265.9	274.0	258.7	268.4	259.6	249.8	261.0	252.4	258.9	3,168
1987	262.9	234.9	262.4	254.9	258.4	248.4	255.8	254.5	246.2	259.3	251.9	257.8	3,047
1988	255.7	242.8	259.6	248.6	255.1	245.1	249.2	250.5	236.8	248.7	240.7	246.2	2,979
1989	245.3	219.2	235.9	232.4	242.0	228.7	230.8	233.9	226.4	231.0	226.1	227.4	2,779
1990[2]	233.2	209.0	229.2	219.9	225.0	212.3	221.5	223.7	215.0	233.8	221.6	227.5	2,685
1991[2]	230.0	211.4	231.9	224.0	228.4	218.5	-277.1	225.4	220.0				

[1] Represents oil transported from producing properties, plus that remaining on properties & consumed on leases. [2] Preliminary.
Source: Bureau of Mines T.500

U.S. Foreign Trade[3] of Petroleum and Products In Millions of Barrels of 42 Gallons

	Exports		Imports					Exports		Imports			
Year	Crude Oil	Refined Products	Crude & Unfin. Oils	Refined Products	Distillate Fuel Oil	Residual Fuel Oil	Year	Crude Oil	Refined Products	Crude & Unfin. Oils	Refined Products	Distillate Fuel Oil	Residual Fuel Oil
1981	83.2	133.9	1,654.2	534.2	63.1	292.1	1987	55.0	223.0	1,837.3	599.4	93.2	206.1
1982	86.3	211.2	1,352.4	514.0	34.0	283.1	1988	56.7	241.0	2,021.6	686.8	110.4	235.9
1983	59.9	209.9	1,317.8	525.9	63.5	255.2	1989	51.7	259.5	2,283.7	656.2	111.7	229.6
1984	66.2	196.9	1,368.8	620.2	99.4	249.2	1990[1]	39.7	272.4	2,325.1	600.8	101.5	183.8
1985	74.5	209.9	1,308.6	540.3	73.1	186.3	1991[2]	26.5	199.8	1,908	304.3	112.3	132.7
1986	56.2	229.3	1,642.7	628.0	90.3	244.2							

[1] Preliminary. [2] Estimate. [3] Includes shipments to & from noncontiguous territories. *Source: Energy Information Administration* T.???

Domestic First Purchase Price of Crude Petroleum at Wells[1] In Dollars per Barrel

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	25.93	26.06	26.05	25.93	26.00	26.09	26.11	26.02	25.97	25.92	25.44	25.05	25.88
1985	24.26	23.64	23.89	24.19	24.18	24.07	24.04	23.99	23.96	24.10	24.27	24.51	24.09
1986	23.12	17.65	12.62	10.68	10.75	10.68	9.25	9.77	11.09	11.00	11.05	11.73	12.51
1987	13.79	14.51	14.54	14.95	15.29	15.95	16.88	17.06	16.25	15.95	15.46	14.27	15.40
1988	13.64	13.43	12.96	13.92	14.12	13.59	12.38	12.22	11.63	10.62	10.31	11.99	12.58
1989	13.80	14.24	15.65	17.04	16.76	16.42	16.32	15.01	15.58	16.25	16.30	17.01	15.86
1990[2]	18.49	18.16	16.57	14.52	13.82	12.79	14.03	21.87	28.46	30.86	27.53	22.63	20.03
1991[2]	19.58	16.22	15.08	16.14	16.41	15.55	16.32	16.57	16.67	17.68			

[1] Buyers posted prices. [2] Preliminary. *Source: Bureau of Labor Statistics Energy Inform. Administration* T.497

Volume of Trading of Crude Oil Futures in New York In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	108.7	130.7	121.5	106.2	136.4	134.5	154.9	200.4	111.2	243.3	174.7	217.7	1,840.3
1985	385.3	263.3	298.5	272.6	290.1	342.2	329.8	269.7	339.8	365.9	337.9	386.8	3,980.9
1986	520.1	490.9	560.0	691.4	677.0	612.7	860.5	701.6	666.7	986.4	604.4	941.8	8,313.5
1987	873.2	968.4	1,199	1,059	937.3	1,196	1,412	1,505	1,126	1,205	1,287	1,813	14,582
1988	1,626	1,336	1,809	1,352	1,205	1,507	1,754	1,219	1,956	2,040	1,609	1,450	18,859
1989	1,919	1,524	2,053	2,070	1,911	2,082	1,663	1,343	1,541	1,521	1,425	1,483	20,535
1990	2,164	1,790	1,794	1,813	1,945	1,839	2,046	2,716	2,073	2,437	1,769	1,302	23,687
1991	1,997	1,478	1,605	1,885	1,737	1,401	1,675	1,598	1,543	2,064	2,051	1,959	

Source: N.Y. Mercantile Exchange T.502c

Average Open Interest of Crude Oil Futures in New York In Contracts

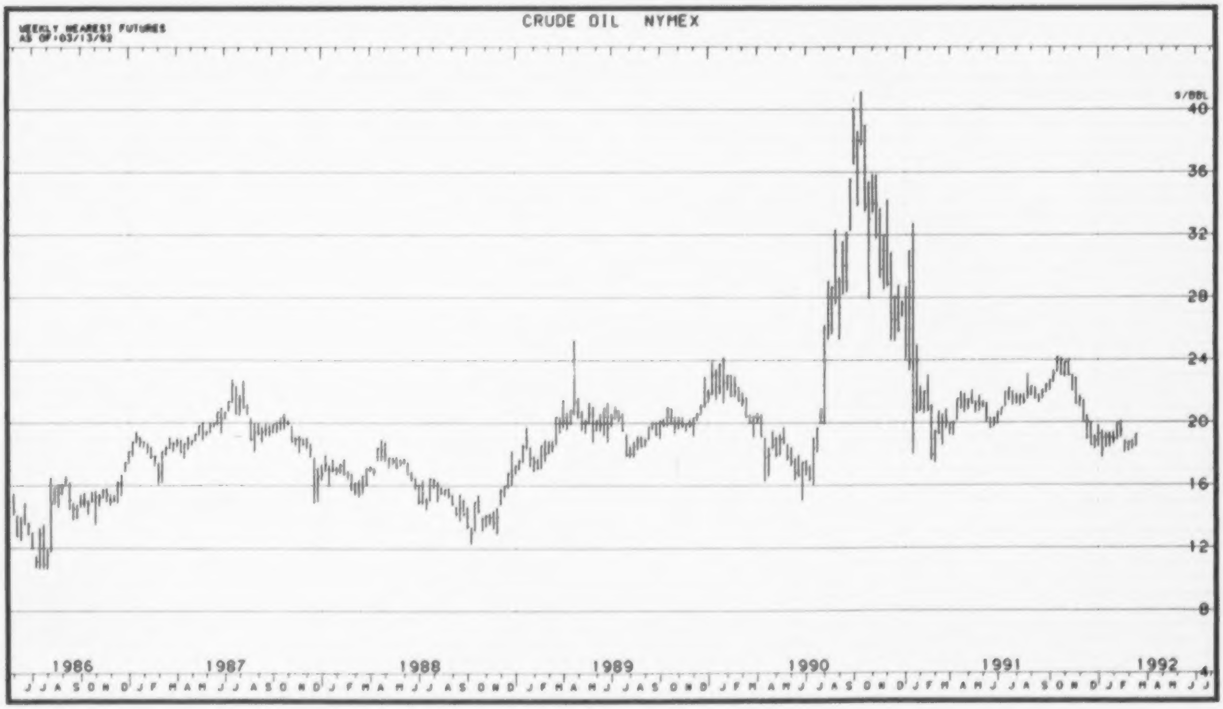
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	69,614	66,811	73,167	88,203	100,012	103,300	122,760	113,286	104,874	117,423	113,077	113,250
1987	127,129	144,569	160,668	155,686	143,305	147,501	177,760	195,468	197,623	183,276	165,489	199,806
1988	202,830	200,813	210,878	192,074	177,155	180,019	177,978	177,879	220,973	221,628	196,454	196,109
1989	204,066	210,299	224,322	248,032	231,390	222,748	221,389	209,702	230,990	235,716	242,677	257,974
1990	273,193	300,069	287,013	287,538	278,600	285,384	275,771	262,746	266,313	269,167	242,500	232,405
1991	249,759	272,396	285,417	303,942	286,159	277,587	278,704	267,186	264,223	298,434	292,889	284,453
1992	310,763											

Source: N.Y. Mercantile Exchange T.502b

High, Low & Closing Prices of December Crude Oil Futures in New York In Dollars Per Barrel

Year of Delivery	Year Prior to Delivery			Delivery Year											Life of Delivery Range
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
1987 High	—	—	—	18.15	18.10	18.08	18.14	18.94	20.31	21.39	21.65	19.59	20.52	19.83	21.65
Low	—	—	—	16.68	16.40	16.42	17.33	17.79	18.75	19.99	18.10	18.54	19.30	18.05	16.40
Close	—	—	—	18.03	16.58	17.97	17.77	18.80	20.05	20.71	19.43	19.48	19.96	18.93	—
1988 High	—	18.15	18.00	16.90	16.72	16.78	18.35	18.07	18.00	16.80	16.57	15.28	14.96	14.38	18.35
Low	—	17.94	14.99	15.55	15.40	15.13	16.31	16.80	15.65	15.00	15.21	13.00	12.13	13.23	12.13
Close	—	17.94	15.97	16.14	15.55	16.65	17.71	17.91	15.68	16.64	15.23	13.02	13.58	13.60	—
1989 High	—	15.15	15.85	17.75	16.56	18.50	18.71	17.95	18.62	19.05	18.69	19.88	20.67	20.38	20.67
Low	—	12.70	14.84	15.66	15.52	16.51	16.78	16.98	16.88	17.85	17.50	18.52	19.32	19.47	12.70
Close	—	15.05	15.36	15.78	16.44	17.44	17.80	17.63	18.31	18.11	18.62	19.87	19.94	20.07	—
1990 High	18.85	18.85	19.70	20.50	21.50	21.08	21.20	20.51	20.05	21.99	30.06	38.50	39.90	35.85	39.90
Low	18.32	18.02	18.56	18.60	19.75	20.10	18.92	19.75	18.55	18.20	21.84	27.22	28.30	28.50	17.65
Close	18.47	18.49	19.60	19.96	20.98	20.76	20.21	19.93	18.81	21.91	26.57	38.31	35.23	31.50	—
1991 High	27.45	25.80	24.04	23.00	23.05	20.87	21.95	22.11	21.27	22.25	23.10	22.45	24.18	24.03	
Low	21.25	23.05	21.05	18.37	17.45	18.55	19.18	20.61	19.60	20.45	21.06	21.25	22.05	20.99	
Close	25.51	23.19	23.09	18.72	19.16	19.63	20.96	21.13	20.56	21.68	22.26	22.23	23.37	21.48	

Source: N.Y. Mercantile Exchange T.502a



Plastics

Although plastics continued to displace metals, wood, glass, paper and other materials, the recession and environmental concerns about plastic products reduced the value of shipments by the U.S. plastics industry in 1991 to $32.2 billion from $33.5 billion in 1990. Shipments were expected to grow by almost 2 percent in real terms in 1992 to $32.7 billion.

The industry's shipments consist mainly of high-volume, low-cost commodity plastic resins. Their prices are essentially related to the costs of the respective petrochemical feedstocks, which were depressed in 1991 by global overcapacity. One of the leading uses for these plastics is packaging, a major target of environmentalists, in spite of studies that have shown that foam cups (made of polystyrene) actually do less damage to the environment than paper products on a total cost basis.

Many municipalities have adopted plastics recycling regulations. In 1991, plastics were estimated to account for 20 percent of the volume of municipal solid waste. About 190 million pounds of plastic soft-drink bottles (made out of polyethylene terephthalate, called PET) were recycled in 1991, accounting for 28 percent of the bottles produced. Recycled PET goes into nonfood consumer products. Similarly, a computer manufacturer began recycling obsolete computer consoles in 1991, and the Association of Foam Packaging Recyclers was formed to coordinate efforts to recycle plastic nuggets and larger pieces used by shippers.

Engineering plastics, accounting for about 8 percent of the industry's shipments in 1991, are finding increasing use in automobile body panels and other uses where their properties provide superior performance. These characteristics include resistance to chemicals, wide ranges of temperatures, and mechanical stress. However, the recession slowed the growth in usage of engineering plastics from the double-digit rates of the 1980s. Patent expirations and increasing competition from overseas producers reduced profits in that sector, although the U.S. remained the world leader in research and development and the commercialization of new products.

The U.S. plastics industry ran a 1991 trade surplus of about $6 billion. Exports accounted for about one-fourth of total shipments. Major markets included Japan, Mexico and Hong Kong. However, the U.S. share of world exports has decreased from 25 percent in the 1970s to about 13 percent in the 1990s. The trend reflects increased capacity in many industrialized nations and attempts by several OPEC members to diversify into petrochemicals.

World Production of Plastics and Resins[3] (Condensation, Polymerization, Etc.) In Thous. of Metric Tons

Year	Australia	Austria	Czechoslovakia	France	— Germany —		Italy	Japan	Netherlands	Poland	Belgium	Hungary	USSR	United Kingdom	United States
					East	West									
1976	407	404	580	1,769	679	7,088	2,266	4,952	1,723	559	824	186	3,216	2,556	13,261
1977	480	430	738	1,834	734	6,270	2,538	4,978	1,783	583	1,471	144	3,300	2,710	11,232
1978	522	434	810	1,885	762	6,703	2,466	5,882	1,962	596	1,682	209	3,516	2,621	12,380
1979	618	437	853	2,220	779	7,255	2,562	6,964	2,012	571	1,969	289	3,504	2,647	13,866
1980	709	487	894	2,052	859	6,710	2,464	6,422	1,975	667	1,835	324	3,636	2,260	12,418
1981	700	504	913	2,480	998	6,600	2,154	5,936	2,393	588	1,940	307	3,696	2,051	13,664
1982	715	454	961		989	6,275	2,142	5,986	2,502	600	2,023	322	4,057	1,966	13,009
1983	776	550	1,004	2,650	1,045	7,031	2,436	6,504	2,777	526	2,246	337	4,392	1,800	14,790
1984		613	1,034	2,694	1,056	7,409	2,718	7,424	2,641	600	2,374	377	4,500	1,900	15,505
1985[1]		606	1,100	2,756	1,048	7,553	2,640	7,301	2,500	604	2,498	382	4,700	1,800	15,762
1986[2]		590	1,140	3,050	1,045	7,841	2,662	7,334		631	2,770	415	5,500	1,850	16,730

[1] Preliminary. [2] Estimate. [3] Refers to production of thermoplastic & thermosetting resins & plastic materials obtained by chemical transformation of natural organic substances or by chemical synthesis. *Source: United Nations* T.506

Production of Important Synthetic Plastics & Resin Materials in the U.S. In Thousands of Metric Tons[3]

Year	Phenolic Resins	Polyethlene & Copolymers	Poly-propylene	Polystyrene & Copolymers	Polyvinyl Chloride & Copolymers	Year	Phenolic Resins	Polyethlene & Copolymers	Poly-propylene	Polystyrene & Copolymers	Polyvinyl Chloride & Copolymers
1980	1,745	11,720	3,699	5,540	5,485	1986	823	7,250	2,838	3,211	3,304
1981	1,688	12,604	4,008	5,915	5,618	1987	770	7,881	3,165	3,757	3,782
1982	1,398	12,548	3,515	5,609	5,397	1988	765	8,480	3,292	4,166	3,896
1983	1,460	13,890	4,457	6,254	6,256	1989	N.A.	7,702	3,005	N.A.	5,005
1984	1,656	14,621	5,216	6,857	6,828	1990[1]	N.A.	8,551	3,525	N.A.	4,113
1985[3]	777	6,948	2,565	3,279	3,025	1991[2]	N.A.	4,119	1,653	N.A.	1,923

Note: Data included in the table does not cover all Plastics production. Various types of Plastics production of lesser importance are not included because statistics are not available on a consistent basis. Also, many individual firms do not make their production figures known. [1] Preliminary. [2] Estimate. [3] Data prior to 1985 are in millions of pounds. *Sources: U.S. Tariff Commission, Bureau of Census* T.507

PLASTICS

Average Producer Price Index of Plastic Materials in the United States (1982 = 100)[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
Plastic Resins and Materials (066)													
1983	283.8	283.1	282.1	285.4	288.0	289.1	291.3	293.7	302.6	299.1	297.9	301.5	291.5
1984	305.2	305.0	306.2	307.8	310.6	311.1	310.6	310.3	311.8	309.4	309.0	306.2	308.6
1985	305.2	306.9	306.3	306.1	305.4	307.1	307.5	306.4	305.1	300.7	300.3	299.3	304.7
1986	300.9	302.4	301.8	296.6	295.6	295.2	296.7	294.4	290.1	292.9	295.0	290.3	296.0
1987[1]	102.6	102.4	103.2	106.3	107.0	109.7	112.8	113.1	114.2	116.8	117.4	117.7	110.3
1988	121.5	123.5	124.4	127.6	130.1	131.2	134.8	136.9	138.9	139.8	140.2	140.1	132.4
1989	140.3	141.1	140.6	140.7	139.8	138.0	135.3	127.7	126.1	124.7	123.7	123.3	133.4
1990	122.2	121.6	122.2	123.0	123.5	123.0	122.1	122.3	123.6	125.1	128.6	131.2	124.0
1991	131.3	128.9	125.4	123.7	120.6	117.0	115.3	114.1	115.5	117.2			
Thermoplastic Resins (0662)													
1983	102.4	102.1	101.5	103.4	104.7	105.2	106.3	107.3	111.6	109.6	108.8	110.6	106.1
1984	112.3	112.0	112.5	112.8	113.4	114.0	113.8	113.6	114.4	113.2	113.0	111.7	113.1
1985	111.1	112.0	111.7	111.5	111.3	111.9	111.9	111.4	110.6	108.3	108.1	107.8	110.6
1986	108.7	109.4	109.0	106.9	106.3	105.9	106.7	105.7	103.6	105.2	106.2	103.9	106.5
1987[2]	102.3	102.1	103.1	107.3	107.9	111.1	113.9	114.1	115.3	118.5	119.3	119.7	111.2
1988	124.4	126.7	127.8	131.1	133.7	134.9	139.0	141.2	143.5	144.3	144.4	144.2	136.3
1989	144.5	145.2	144.4	143.9	143.2	141.1	137.7	128.5	126.7	125.1	124.0	124.0	135.7
1990	122.9	121.9	122.5	123.5	124.1	123.4	122.4	122.5	124.1	125.8	130.5	134.0	124.8
1991	132.8	129.3	125.5	123.7	120.2	114.0	114.0	112.7	114.6				
PE Resin, Low, Film & Sheeting (0662-0301)													
1983	204.9	205.2	193.9	215.4	215.4	N.A.	236.2	236.2	237.8	251.6	250.9	250.9	227.1
1984	272.1	272.6	272.1	272.1	272.1	272.1	272.1	272.1	272.1	272.1	272.1	272.1	272.1
1985	272.1	272.1	272.1	272.1	272.1	272.1	272.1	272.1	272.1	206.8	206.8	206.8	255.8
1986	224.7	224.7	224.7	224.7	224.7	224.7	224.7	224.7	N.A.	224.0	222.5	224.5	224.4
1987[1]	112.3	113.1	110.5	113.9	114.6	121.5	123.9	127.8	127.9	131.9	138.8	140.7	123.1
1988	145.9	150.3	153.8	157.9	171.4	172.0	178.3	192.3	201.3	203.5	202.7	201.6	177.6
1989	202.0	206.6	206.0	204.0	200.8	195.3	191.9	151.5	150.3	150.9	152.3	153.0	180.4
1990	151.9	145.3	146.1	145.9	152.5	151.7	144.9	141.9	152.3	145.6	149.8	157.4	148.8
1991	160.0	152.0	142.6	136.2	130.1	121.9	117.8	114.8	118.1	123.2			
Styrene Plastics Materials (0662-06)													
1987	96.0	96.1	101.3	108.3	110.0	116.8	119.6	115.4	117.6	116.6	119.5	119.7	111.4
1988	122.2	125.2	127.0	128.9	129.0	131.7	133.6	134.1	134.1	135.4	134.7	134.8	130.9
1989	135.3	136.3	134.4	135.8	135.1	133.1	124.6	119.5	119.0	116.8	114.2	114.4	126.5
1990	113.1	114.7	117.2	116.8	116.8	115.2	113.7	113.7	116.8	123.4	127.8	124.2	117.8
1991	123.3	119.8	115.4	115.9	112.4	111.5	109.2	107.7	108.2	115.1			
Thermosetting Resins (0663)													
1983	109.0	108.8	108.9	108.5	108.4	108.6	108.7	109.4	110.1	110.8	111.5	111.5	109.5
1984	112.2	112.7	113.1	113.3	116.1	114.6	114.4	114.6	114.5	114.4	114.2	114.2	114.0
1985	114.1	114.1	114.2	114.1	114.0	114.6	114.9	115.0	115.3	115.7	115.7	115.1	114.7
1986	114.9	115.0	115.1	113.7	113.5	114.0	114.0	113.4	113.3	112.7	112.8	112.7	113.8
1987[2]	101.5	101.4	101.9	102.2	103.6	105.5	110.6	111.1	111.8	111.8	111.3	111.0	107.0
1988	110.2	110.4	110.7	113.5	115.4	115.7	116.8	118.4	119.2	120.0	122.4	122.7	116.3
1989	122.4	124.0	124.9	127.9	126.6	126.5	126.8	127.5	126.9	126.6	125.9	123.8	125.8
1990	122.8	124.0	124.1	124.4	124.3	124.7	124.7	124.8	125.0	125.6	124.0	126.6	124.6
1991	127.7	130.8	128.9	127.9	126.3	125.2	125.8	125.0	123.9	124.5			
Phenolic Molding Compounds (0663-0201)													
1983	249.6	245.7	245.7	245.7	245.7	245.7	245.7	245.9	246.0	246.0	245.6	245.7	246.1
1984	245.6	245.8	246.3	252.1	259.5	260.2	259.4	259.4	259.7	259.6	259.2	259.2	255.5
1985	259.2	259.2	259.2	259.2	259.2	259.2	259.2	268.1	268.1	268.1	268.1	268.1	262.9
1986	267.3	267.3	267.3	259.2	252.4	252.4	252.4	252.4	252.4	252.4	252.4	252.4	256.7
1987[1]	100.8	99.2	99.2	101.1	112.0	112.1	112.1	114.8	114.8	114.8	114.8	114.8	109.2
1988	114.8	114.8	114.8	115.4	122.1	122.1	122.3	122.3	122.3	123.6	128.2	128.2	120.9
1989	128.7	132.6	132.4	132.2	132.2	132.2	132.2	132.2	132.2	132.0	128.9	128.9	131.4
1990	128.9	128.9	128.9	128.9	128.9	128.9	129.7	129.7	129.7	129.7	129.7	133.2	129.6
1991	133.2	133.2	133.2	133.2	131.2	131.2	133.2	133.2	131.2	131.2			

[1] Data prior to 1987 are for 1967 = 100. [2] Data prior to 1987 are for Dec. 1980 = 100. *Source: Bureau of Labor Statistics* T.508

Platinum-Group Metals

South Africa is the world's largest producer of platinum-group metals; however, the demise of the Soviet Union dominated the market in 1991. PGM output in the former USSR is primarily a by-product of nickel mining in the Russian Republic, of which 90 percent is from the Norilsk complex. Mining data were state secrets under communist rule. Western mining experts visited Norilsk in 1991, and indications were that output had dropped sharply. Russian production was estimated to have declined 30 percent in 1991 and may fall another 10 percent in 1992.

World free-market platinum demand rose 5 percent in 1991 to a record 3.88 million ounces, despite the Gulf war and the global recession, according to Johnson Matthey. Norilsk's problems should have been bullish, considering the dollar's depreciation against the yen and the D-mark. However, Johnson Matthey estimates that the former USSR increased its free-market platinum sales by 29 percent to 930,000 ounces in 1991. This does not include some 740,000 ounces shipped to Switzerland during the first eight months of 1991, believed to have been used as security for hard-currency loans. Because of the Soviet sales, Johnson Matthey estimated that free-market platinum supplies totaled 4.09 million ounces in 1991, up 10 percent from 1990 and 210,000 ounces more than free-market demand.

Platinum sold outright went mainly to Japan. Open interest in platinum futures was about seven times larger on the Tokyo Commodity Exchange for Industry than on the New York Mercantile Exchange in 1991. Japan's largest bullion house, Tanaka Kikinzouko Kogyo, estimated Japanese investment demand for platinum at 10.5 tonnes (about 338,000 ounces) in 1991, up 139 percent from 4.4 tonnes in 1990. To put that into perspective, Japan used 11.5 tonnes (about 370,000 ounces) for auto catalytic converters in 1991. The trade house estimated total Japanese demand at 71 tonnes (2.282 million ounces), up 13.4 percent from 1990.

The largest use for platinum in Japan is jewelry. Thanks to lower prices, sales increased an estimated 9.5 percent to 1.3 million ounces in 1991. The gain was concentrated in lower-priced pieces popular with single Japanese women, who tend to live with their parents and spend a larger portion of their disposable income on jewelry. In the U.S., platinum jewelry is a novelty, accounting for only 1 percent of the 760,000 ounces of platinum used in the U.S. in 1991. One TV shopping network began selling 14-carat platinum pieces fabricated in Thailand, and platinum coins were popular in settings for ear rings and necklaces. Otherwise, platinum is used for setting diamonds and other stones, but that was an extremely soft market in 1991. De Beers reported that diamond sales fell 6 percent last year, and many U.S. jewelers had dismal holiday sales. With the Japanese economy slipping, lower prices were expected to be less stimulative to Japanese jewelry demand in 1992.

Japanese investors tend to buy platinum on price weakness and hold for the longer term, and they had opportunities to do so in 1991. This strategy also applies to futures speculators, who tend to hold onto positions in deferred contracts. That was disastrous when August 1991 futures expired; futures-related selling drove cash prices to a 5 1/2-year low of $331.50/oz., down 19.5 percent from the year-end 1990 price of $411.75.

The price decline was a threat to South Africa's output, and several mines put expansion plans on hold because prices were at or below break-even levels. In contrast, continued labor problems at South African mines, hit by frequent short strikes in 1991, and that country's unsettled political climate were practically ignored by the market. Rhodium's return to more usual levels below $2,000/oz. from more than $7,000 early in 1991 was considered likely to lead to further reductions in South African output in 1992.

In the U.S., low prices forced layoffs at the Stillwater Mine in Montana, which is primarily a palladium producer.

In May 1991, Nissan announced the development of a palladium-only, three-way catalytic converter, similar to one announced by Ford in 1989. The converter had not been tested on a car, and was unsuitable for anything larger than a Japanese mini car. Also, there were indications that it would require ten times the metal of a platinum-rhodium converter, wiping out any possible cost savings. The news lead to additional weakness in platinum and rhodium prices. However, it did not have a lasting effect on palladium prices, which sank to a low of $78.25/oz. in August.

Futures Markets

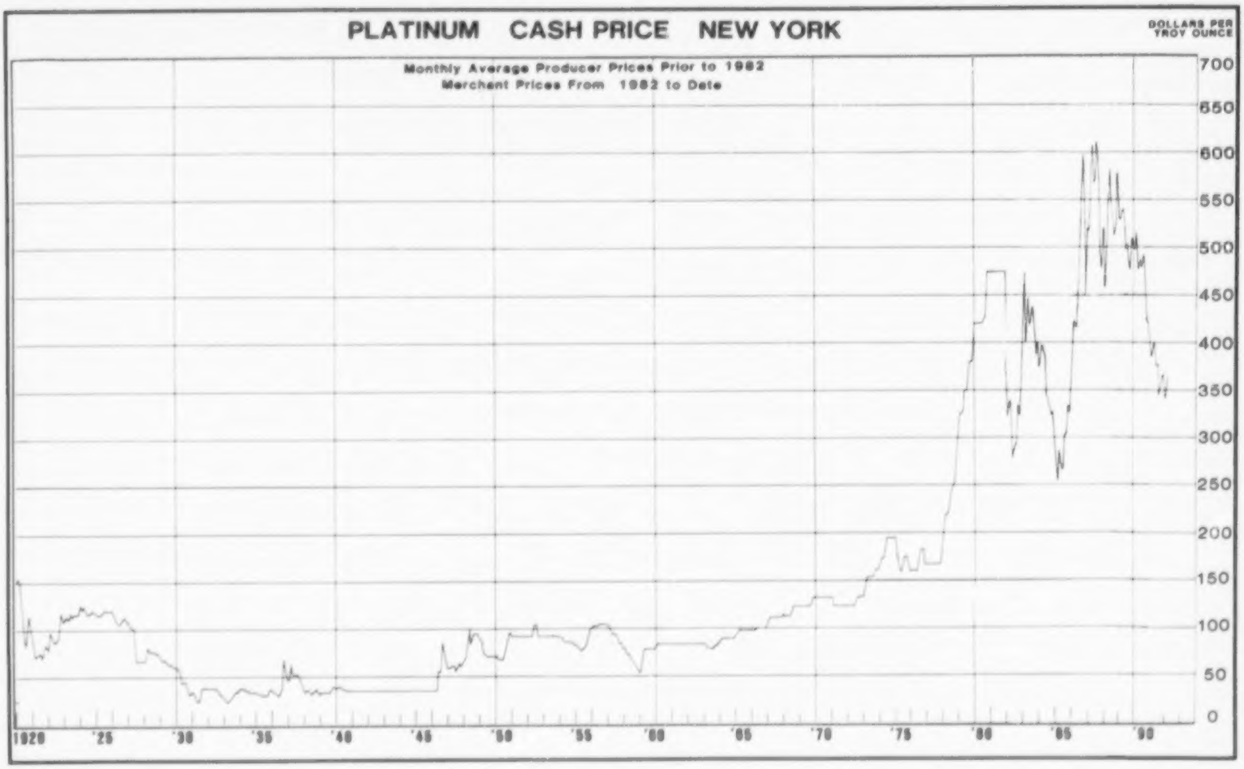
Platinum and palladium futures and options on platinum futures are traded on the New York Mercantile Exchange. In Japan, platinum futures are traded on the Tokyo Commodity Exchange, which was planning to begin palladium futures trading in April 1992.

World Mine Production of Platinum-Group Metals In Kilograms (2.0246 lbs., Avoirdupois)

Year	Australia	Zimbabwe	Finland	Canada	Colombia[3]	Ethiopia[3]	Japan	South Africa	USSR	United States	Yugo-slavia	World Total[1]
1988	515	74	160	12,541	810	1	1,817	133,300	127,500	4,970	165	281,854
1989	500	55	160	10,375	964	2	1,845	135,800	127,500	6,280	162	283,643
1990[2]				11,209				138,500	125,000	7,740		287,000
1991[1]				11,000				139,000	125,000	7,700		287,000

[1] Estimate. [2] Preliminary. [3] Placer platinum. *Source: Bureau of Mines*

T.509



PLATINUM CASH PRICE NEW YORK

Platinum-Group Metals Sold to Consuming Industries in the United States In Kilograms[4]

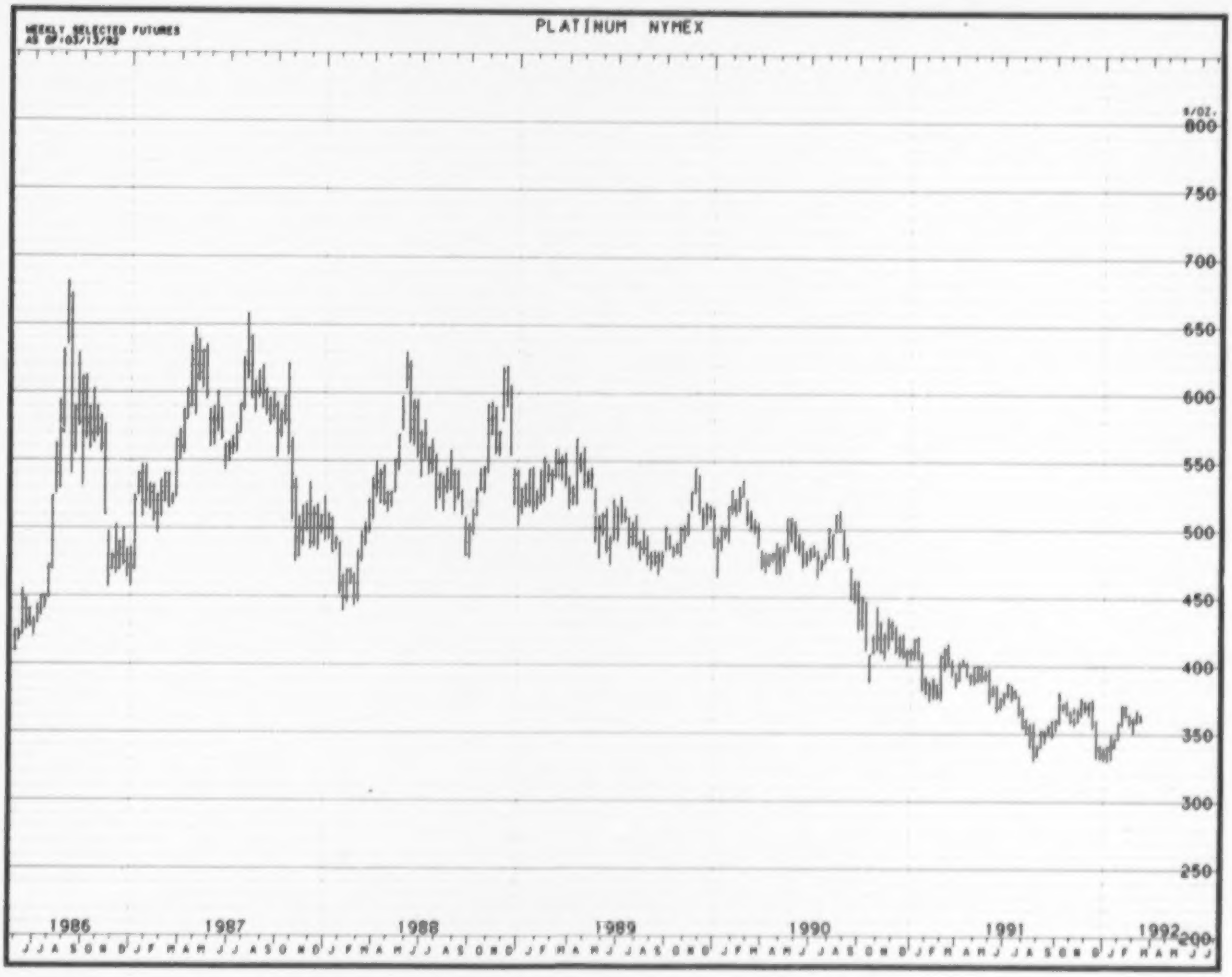
Year	Automotive		Chemical		Electrical		Dental & Medical		Jewelry & Decorative		Petroleum		All Platinum-Group Metals			
	Platinum	Others[2]	Platinum	Others[2]	Platinum	Others[2]	Platinum	Others[2]	Platinum	Others[2]	Platinum	Others[2]	Platinum	Palladium	Other[2] Metals	Total
1985	619.0	250.3	85.2	87.4	115.8	359.1	24.5	340.1	16.0	12.8	28.8	81.0	1,025.8	1,060.3	185.4	2,271.5
1986	625.0	232.6	77.7	75.4	103.5	356.3	20.8	268.9	11.3	9.8	30.6	61.0	981.0	889.9	209.4	2,080.3
1987	605.0	223.1	61.7	41.3	58.5	349.8	15.4	338.4	5.7	15.4	23.8	41.3	825.2	995.3	123.9	1,944.4
1988	19.3	7.2	3.2	4.5	3.5	14.4	.6	6.7	.4	.4	1.1	1.5	31.1	34.2	5.6	71.0
1989	18.8	6.9	2.4	2.2	3.9	19.5	.6	8.6	.4	.4	2.9	2.6	33.7	39.3	5.5	78.4
1990[1]	21.0	3.0	2.1	2.1	3.9	18.0	.7	1.5	.4	.4	3.3		36.1	35.1	6.7	77.5
1991[1]	9.2	.6	.5	1.2	2.0	8.2	.3	9.3	.9	1.0	5.1		15.6	13.0	15.9	31.4

[1] Preliminary. [2] Palladium, iridium, osmium, rhodium, & ruthenium. [3] Estimate. [4] Prior to 1988 data are in thousands of troy ounces. *Source: Bureau of Mines* T.512

Salient Statistics of Platinum and Allied Metals in the U.S. In Kilograms

Year	Net Import Reliance as a % of Apparent Consump.	Mine Production		Refinery Production	Total Refined	Refiner, Importer & dealer Stocks as of Dec. 31				Imports for Consumption		Exports		Consumption (Apparent)
		Platinum	Palladium	Primary		Platinum	Palladium	Other	Total	Refined	Total	Refined	Total	
1985	92	N.A.	N.A.	227	40,563	17,783	14,152	3,171	35,106	106,928	124,090	16,369	27,640	104,511
1986	90	N.A.	N.A.	135	47,075	20,426	16,958	2,803	40,187	115,924	139,256	11,879	23,349	109,904
1987	91	780	2,330	191	44,935	19,004	17,356	2,052	38,412	98,878	118,397	13,423	22,031	95,458
1988	91	1,240	3,730	297	46,403	18,438	14,837	2,240	35,514	110,947	124,324	20,301	28,787	103,302
1989[1]	90	1,430	4,850	339	46,253	14,791	15,182	2,570	32,543	111,107	113,278	23,082	38,301	101,209
1990[1]	88	1,810	5,930	64	46,447	13,000	12,000	2,000	30,324	20,631	25,354	20,148	55,044	116,242
1991[1]	88	1,800	5,900	100	50,000				25,000	118,000	123,000	30,000	44,000	105,924

[1] Estimate. [2] Preliminary. [3] Palladium, rhodium, iridium, osmium, ruthenium & osmium metals & balloys. [4] Ore & concentrates, waste, scrap & sweepings. [5] From crude platinum placers & byproduct platinum-group metals. *Source: Bureau of Mines* T.513



Average Merchant's Prices of Platinum in New York In Dollars Per Troy Ounce

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1974	162.68	172.50	172.50	172.50	174.55	195.00	195.00	195.00	195.00	195.00	195.00	195.00	184.98
1975	195.00	180.53	175.00	163.06	160.00	160.00	162.73	175.00	175.00	172.17	160.00	160.00	169.87
1976	160.00	160.00	160.00	160.00	160.00	163.54	175.60	182.50	182.50	182.50	167.00	167.00	168.39
1977	167.00	167.00	167.00	167.00	167.00	167.00	167.00	167.00	167.00	167.00	167.65	174.81	167.71
1978[1]	186.55	206.58	217.07	220.00	220.00	227.73	237.89	241.74	250.23	253.18	284.00	300.00	237.08
1979	303.41	325.00	325.00	327.38	350.00	350.00	350.00	357.83	380.00	380.00	380.00	393.33	351.83
1980	420.00	420.00	420.00	420.00	420.00	420.00	420.00	425.24	475.00	475.00	475.00	475.00	436.77
1981	475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00	475.00
1982	369.26	361.95	322.46	338.95	314.43	278.26	286.90	290.41	334.98	324.58	346.65	370.95	328.32
1983	441.07	468.34	400.17	410.38	446.69	420.23	431.63	438.30	431.93	399.87	389.33	399.70	423.14
1984	375.11	391.38	398.47	395.17	388.95	386.31	345.55	336.03	327.36	324.65	328.45	309.11	358.83
1985	275.76	274.37	255.36	287.23	273.24	267.94	269.52	303.91	304.59	321.73	334.53	327.75	291.33
1986	362.77	377.74	412.48	422.93	415.52	431.23	436.50	526.52	597.92	578.50	524.65	480.14	463.91
1987	520.08	518.30	533.27	587.38	607.08	569.14	573.57	610.12	590.55	568.65	500.02	479.29	554.79
1988	494.14	458.64	496.49	527.73	548.91	581.32	548.51	532.80	513.16	527.35	577.74	567.36	531.18
1989	528.69	532.66	538.26	539.96	517.20	498.81	503.16	485.20	479.29	485.48	508.73	507.24	510.39
1990	498.23	517.17	496.45	478.37	487.89	481.67	480.24	493.41	461.34	425.58	421.99	417.05	471.63
1991	407.75	388.36	400.96	396.48	390.35	376.20	375.33	346.18	349.57	363.66	364.98	354.65	376.20
1992[2]	342.26												

[1] Prior to 1978 prices are for *producer* prices. [2] Preliminary. *Source: American Metal Market* T.511

Average Open Interest of Platinum Futures in New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1984	12,460	12,838	14,246	14,544	15,827	15,911	15,768	15,743	16,556	15,305	14,885	15,651
1985	15,107	14,770	14,307	12,934	11,787	11,844	11,585	14,225	15,229	12,615	14,618	16,534
1986	17,496	18,587	20,993	17,591	16,007	18,867	17,473	20,989	27,426	19,825	20,256	17,485
1987	16,641	16,544	18,629	20,777	19,675	17,977	17,290	22,890	24,421	22,631	20,458	19,756
1988	17,133	18,080	16,737	16,718	18,643	22,735	19,668	17,671	19,936	19,097	22,022	24,384
1989	19,334	18,648	19,736	19,895	19,661	20,597	17,310	19,121	19,165	16,981	19,934	20,392
1990	19,510	17,970	15,888	15,915	16,688	15,652	15,496	17,254	18,494	17,472	16,313	16,994
1991	15,497	16,043	16,083	14,185	15,314	16,043	16,083	14,334	15,779	18,273	17,503	19,214
1992	18,611											

Source: N.Y. Mercantile Exchange T.515

Volume of Trading of Platinum Futures in New York In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	44.7	43.7	68.9	54.5	44.9	53.8	55.2	38.4	52.2	35.9	38.3	40.7	571.1
1985	41.0	26.2	53.5	48.8	43.1	42.2	40.3	98.1	82.7	68.6	64.8	84.0	693.3
1986	101.3	114.7	139.8	100.3	77.0	122.2	75.4	189.8	289.4	164.8	136.6	113.3	1,624.6
1987	117.2	85.7	134.1	149.3	110.8	116.5	87.1	133.2	122.7	127.2	88.6	89.2	1,361.5
1988	82.8	77.6	119.2	74.3	123.3	182.2	111.5	105.8	125.1	114.6	164.8	179.2	1,460.5
1989	113.6	96.6	148.5	107.3	111.6	126.9	69.8	86.8	85.1	56.4	99.8	88.1	1,190.5
1990	85.6	80.9	81.3	55.3	65.2	70.1	52.7	73.8	77.2	68.0	50.1	56.8	817.1
1991	50.8	42.3	71.4	43.0	51.1	55.7	40.6	45.7	55.8	45.2	41.2	60.3	603.1

Source: N.Y. Mercantile Exchange T.516

High, Low & Closing Prices of April Platinum Futures in New York In Dollars per Ounce

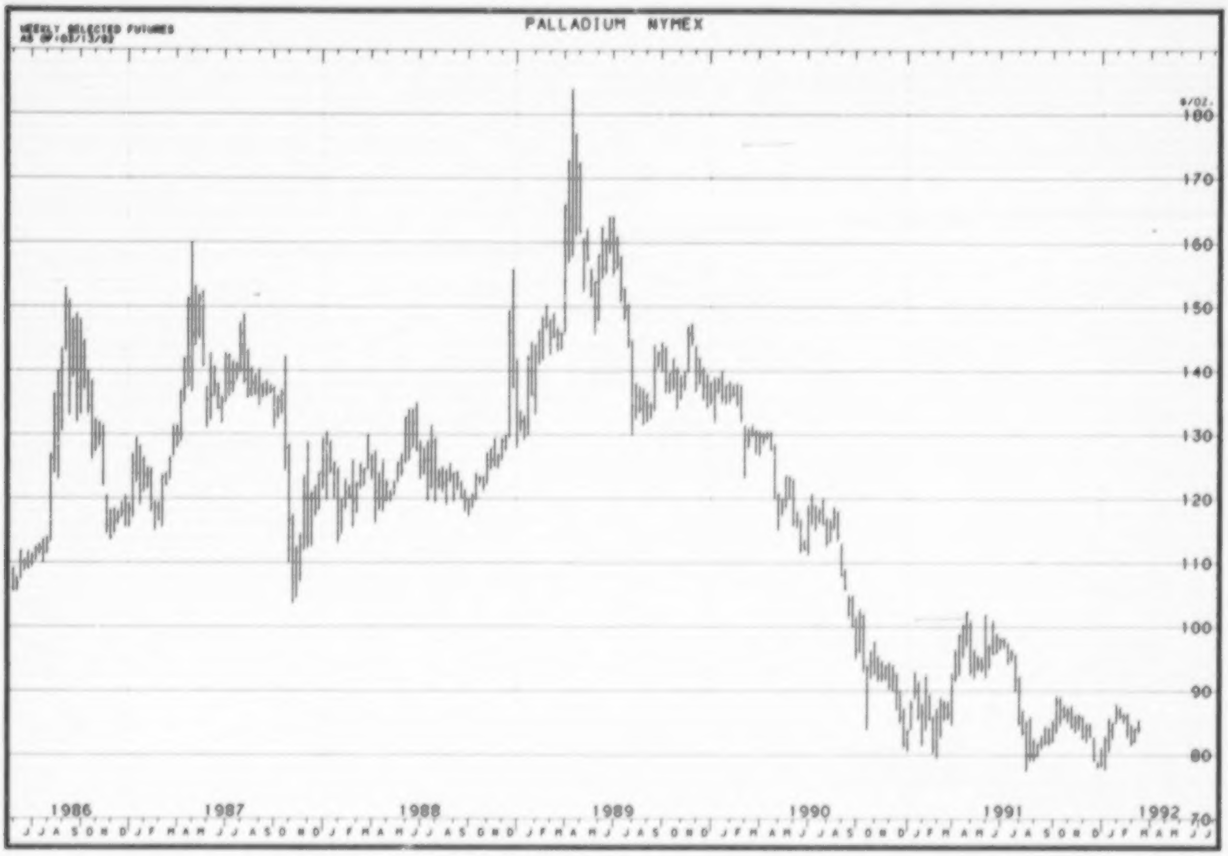
Year of Delivery		Year Prior to Delivery											Delivery Year				Life of Delivery Range
		Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
1985	High	438.5	447.5	440.0	427.5	433.5	402.0	370.5	352.2	345.0	350.0	328.0	289.5	282.0	290.0	308.0	447.5
	Low	415.0	422.0	414.0	411.5	401.0	343.0	350.5	335.0	327.8	322.0	291.0	265.5	244.5	236.0	263.5	236.0
	Close	433.5	426.0	417.4	426.2	402.9	349.7	361.3	336.1	331.7	323.0	293.0	280.5	249.3	281.4	281.5	—
1986	High	—	308.5	329.8	303.9	293.9	298.5	357.0	333.0	345.0	362.5	356.0	385.0	425.8	444.5	434.0	444.0
	Low	—	279.5	290.5	273.0	275.5	261.2	287.0	297.5	311.0	326.5	321.0	340.0	345.2	391.2	385.0	261.2
	Close	—	307.3	290.5	281.5	278.6	297.7	338.9	309.5	327.9	349.0	346.2	372.7	402.3	399.1	426.9	—
1987	High	430.0	448.5	446.0	434.5	463.3	475.0	620.1	689.5	622.0	586.0	506.7	553.7	536.0	573.0	647.5	689.5
	Low	361.0	400.0	398.0	404.0	425.5	432.0	471.0	546.4	564.5	459.5	462.0	472.0	496.2	515.0	551.5	361.0
	Close	409.4	412.9	430.3	433.1	441.9	473.6	620.1	558.6	576.2	481.7	476.2	527.7	525.6	555.8	602.8	—
1988	High	546.5	590.0	670.8	657.0	622.5	639.1	669.0	635.0	637.0	546.0	531.5	518.8	475.0	538.0	549.0	670.8
	Low	516.0	533.6	573.0	588.0	565.0	572.0	600.0	580.0	516.0	484.3	493.0	452.1	439.5	462.0	512.0	439.5
	Close	542.6	574.8	629.7	600.4	574.0	636.5	612.1	582.6	541.1	527.8	507.6	457.9	475.0	530.7	516.1	—
1989	High	493.0	555.0	565.4	630.4	648.7	599.0	565.9	551.0	552.0	605.0	607.0	550.0	553.0	559.0	566.2	648.7
	Low	467.1	482.0	537.9	536.6	570.0	530.0	528.0	489.0	505.0	549.5	501.0	511.0	516.5	514.5	517.5	467.1
	Close	493.0	552.4	544.6	630.4	577.8	542.9	544.9	511.0	549.6	604.7	515.6	517.5	540.9	526.6	543.3	—
1990	High	548.3	557.0	571.2	544.0	524.5	532.0	515.0	508.0	505.0	549.7	526.5	529.0	536.9	514.0	490.3	571.2
	Low	525.9	525.0	528.0	491.0	484.0	495.8	480.5	475.0	486.5	496.3	496.0	473.0	503.1	471.0	467.0	467.0
	Close	539.9	535.6	530.5	506.8	506.5	508.9	480.5	502.7	498.7	520.0	496.3	512.2	508.0	474.5	467.2	—
1991	High	555.7	537.0	508.0	526.7	511.0	508.0	524.0	497.5	461.0	442.0	432.8	425.5	408.5	416.5	405.3	555.7
	Low	532.1	497.3	473.5	497.0	488.2	485.5	492.0	439.4	394.5	409.2	404.0	380.0	373.5	384.0	386.0	373.5
	Close	532.1	497.3	493.3	511.0	504.7	501.9	495.1	445.3	443.4	429.2	414.0	386.5	405.7	389.8	388.4	—

Source: N.Y. Mercantile Exchange T.514

Average Open Interest of Palladium Futures in New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	6,370	6,281	6,280	7,359	7,334	6,386	6,739	7,576	6,968	7,476	6,651	5,621
1988	6,094	6,434	6,194	6,269	6,419	7,038	7,330	7,160	6,360	6,263	6,188	6,289
1989	6,460	6,758	6,636	9,082	9,173	9,116	8,307	7,616	7,105	6,847	7,123	6,660
1990	6,296	6,350	5,276	5,359	5,476	5,361	5,493	5,717	5,165	5,100	5,316	4,565
1991	4,658	4,559	4,319	4,686	4,559	4,302	4,454	4,429	4,429	4,384	4,337	4,042
1992	3,984											

Source: N.Y. Mercantile Exchange



High, Low & Closing Prices of March Palladium Futures in New York In Dollars Per Ounce

Year of Delivery		Year Prior to Delivery										Delivery Year			Life of Delivery Range
		Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
1989	High	—	123.25	123.10	126.50	132.00	128.50	123.50	123.00	123.50	127.50	145.25	144.50	150.25	155.00	155.00
	Low	—	114.90	116.45	117.00	120.95	118.15	118.50	116.00	117.50	121.00	124.25	129.25	138.75	142.50	114.90
	Close	—	121.20	118.70	125.25	121.60	121.00	120.05	117.95	122.00	126.70	129.00	138.45	144.05	150.65	—
1990	High	137.55	163.75	176.00	156.00	153.00	154.00	140.75	145.25	143.60	147.50	145.25	139.90	138.00	131.50	176.00
	Low	129.00	135.00	155.65	141.40	142.00	140.00	131.00	134.00	136.50	136.00	134.75	132.00	123.25	123.00	123.00
	Close	137.55	163.75	155.65	142.15	151.35	141.75	134.10	143.05	136.65	140.15	135.50	136.80	126.25	126.65	—
1991	High	—	—	135.45	126.00	122.60	121.80	121.50	113.50	104.00	97.50	93.90	93.00	92.50	89.00	135.45
	Low	—	—	122.00	121.50	115.75	117.00	112.40	96.00	86.50	90.00	80.55	81.50	79.50	82.75	80.55
	Close	—	—	122.00	123.00	120.25	117.25	112.40	97.95	97.25	91.60	81.25	84.75	87.05	84.65	—

Source: N.Y. Mercantile Exchange

Average Dealer[1] Price of Palladium in the United States In Dollars Per Troy Ounce

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1986	101.83	103.18	110.62	110.64	109.23	110.40	112.00	127.05	142.30	136.68	125.36	118.15	117.29
1987	124.13	121.32	122.74	136.58	146.55	140.00	141.34	143.32	137.93	132.72	113.42	121.99	131.84
1988	125.26	120.40	122.67	123.62	124.06	128.77	126.25	123.84	121.04	122.59	126.80	133.30	124.89
1989	135.74	141.79	152.84	165.46	155.17	152.92	151.36	135.97	137.85	137.84	139.35	139.75	145.50
1990	135.80	136.63	131.25	128.18	120.08	117.40	116.60	116.17	106.62	96.12	94.84	90.93	115.89
1991[2]	86.95	84.46	86.20	96.62	95.31	97.20	94.53	82.94	82.00	85.28	85.24	83.24	88.33
1992[2]	83.08												

[1] Based on wholesale quantities, prompt delivery. [2] Estimate. *Source: American Metal Market*

T.510

Pork Bellies

Pork bellies are obtained from the underside of a hog. A hog has two bellies, each weighing about 8-18 pounds, depending on the hog's commercial slaughter weight, which in recent years has risen to about 250 pounds.

Consumer demand for bacon is strongest during the summer, when lighter foods are preferred. Demand reaches its low in the winter. Food needs, however, are changing as consumers curtail fat intake and seek products that contain fewer chemicals from processing.

Belly prices do not necessarily follow the seasonality of demand, as reflected by the futures market, which at times has set new contract lows in the summer and risen in the winter. When contraseasonal price swings occur, it usually reflects the adequacy of supplies deliverable against futures at exchange-approved warehouses. The fact that there are no futures delivery months between August and the following February adds to price distortions.

Mid-1991 brought the usual seasonal pattern of heavy drawdowns of belly stocks, which fell to 16.05 million pounds by October, generally the lowest inventory time, from June's 79.98 million, generally the high inventory month. This pattern reflects heavy fall and early spring net add-ins and heavy summer drawdowns.

The degree of storage accumulation often reflects the spread differential between wholesale fresh belly prices, especially for 12-14 pound bellies in the central U.S., and the price of the nearest deliverable futures contract.

For example, in early November 1991, wholesale fresh belly prices were around $30-$32 per cwt., compared with over $40 a cwt. for February 1992 futures, a spread wide enough to encourage processors and wholesalers to store bellies. However, nearby 1992 futures failed to hold over $40 as 1991 drew to a close. Moreover, the larger hog production that was likely in 1992 could dampen the inventory buildup until the contraction phase of the hog cycle kicked in, which was not expected until late 1992. Accordingly, the lesser demand for stocks was likely to put additional pressure on prices during much of 1992, exacerbated by a sluggish economy and the change in dietary propensities.

The average monthly wholesale belly price (12-14 pounds) declined steadily through 1991, with the high of $60.57 per cwt. set in January, while the following October's average was $32.26. Average monthly retail bacon prices during 1991, following the normal seasonal swing, peaked in mid-year at around $2.30/lb. and trended towards $2.00 by year-end. Prices averaged $2.26/lb. in late 1990. The fundamental setting for 1992 suggests further downward pressure, putting retail prices under $2.00/lb., last seen in 1989.

Futures Markets

Pork belly futures and options are traded on the Chicago Mercantile Exchange (CME).

United States Quarterly Sliced Bacon Production[1] In Millions of Pounds

Year	Retail	Commercial	Total	Year	Retail	Commercial	Total
1982	1,000.7	500.8	1,501.5	1984	1,038.0	693.6	1,754.0
I	246.3	120.9	367.2	I	253.6	176.4	430.0
II	247.2	128.0	375.3	II	246.8	162.2	409.0
III	273.5	129.2	402.6	III	268.8	166.4	435.2
IV	233.7	122.7	356.4	IV	268.8	188.6	457.4
1983	1,113.6	562.8	1,676.4	1985	—		1,672.5
I	248.6	127.7	376.2	1986	—		1,559.7
II	250.8	140.8	391.6	1987	—		1,579.9
III	260.6	152.1	412.8	1988[2]	—		2,124.8
IV	353.6	142.2	495.7	1989			

[1] Smoked, dried or cooked. Under Federal Inspection. [2] Preliminary. *Source: Agricultural Marketing Service, USDA* T.517a

U.S. Frozen Pork Belly Storage Stocks (In Thousand Pounds, as of First of the Month)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	54,639	46,167	41,855	66,061	—	—	72,593	—	—	7,558	—	—
1983	31,292	33,592	33,400	44,304	54,510	64,671	63,468	48,409	26,642	15,672	20,047	52,924
1984	78,648	71,568	78,169	95,009	112,205	127,527	115,034	85,630	43,626	22,321	24,048	38,333
1985	57,361	53,623	51,633	68,315	83,836	96,040	88,367	61,397	35,764	20,158	29,787	47,427
1986	51,314	47,633	51,218	62,508	68,325	65,895	61,547	40,333	20,797	12,941	17,022	24,528
1987	37,771	34,900	34,717	41,821	50,482	58,245	47,367	28,649	18,938	12,620	14,850	35,487
1988	62,089	62,996	67,035	90,347	102,543	111,484	103,401	73,747	42,623	31,054	49,550	93,254
1989	113,137	116,191	121,556	127,617	143,751	142,340	126,676	94,107	49,083	32,031	39,358	67,489
1990	85,026	77,255	85,789	96,945	102,899	105,482	87,983	55,859	23,352	4,785	5,506	24,044
1991[1]	46,998	48,750	54,529	68,094	80,382	79,936	72,032	45,915	29,832	15,944	25,558	48,311
1992[1]												

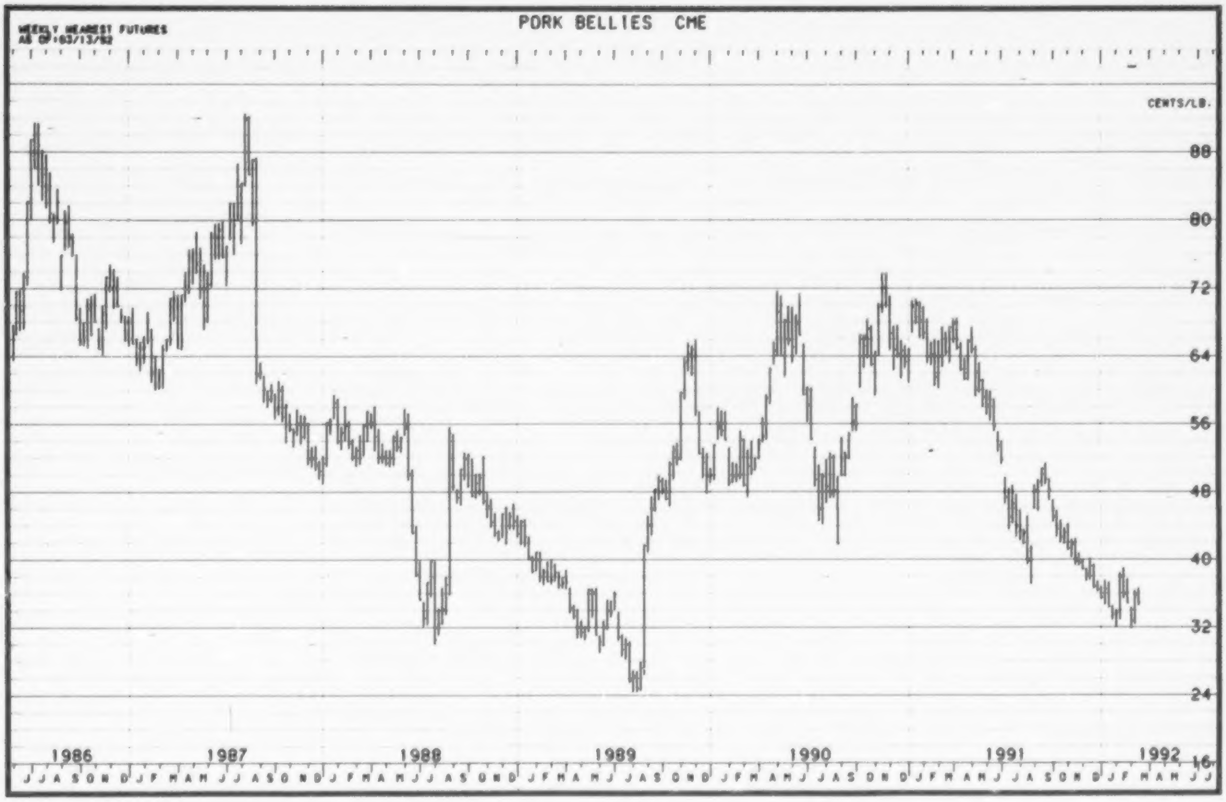
[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.517

Weekly Pork Belly Storage Movement

	Stocks[1] In Thousands of Pounds					Stocks[1] In Thousands of Pounds			
1990 Week Ending	In	Out	On Hand	Net Movement	1991 Week Ending	In	Out	On Hand	Net Movement
Jan. 5	—	81	10,659	-81	Jan. 4	—	167	10,339	-167
12	—	161	10,268	-161	11	41	—	10,420	+41
19	—	151	9,865	-151	18	—	—	10,439	—
26	—	—	9,800	—	25	—	—	10,439	—
Feb. 2	—	—	10,043	—	Feb. 1	—	—	10,439	—
9	—	—	10,582	—	8	—	—	10,390	—
16	203	41	10,891	+162	15	245	—	10,879	+245
23	345	—	11,723	+345	22	243	41	11,404	+202
Mar. 2	—	—	12,118	—	Mar. 1	196	40	11,692	+156
9	120	—	12,423	+120	8	242	40	12,344	+202
16	—	—	12,737	—	15	283	41	13,549	+242
23	160	—	13,247	+160	22	277	—	14,547	+277
30	241	—	13,648	+241	29	325	9	15,434	+316
Apr. 6	79	—	14,009	+79	Apr. 5	255	—	16,494	+255
13	40	—	14,276	+40	12	202	40	17,219	+162
20	40	—	14,356	+40	19	123	—	17,704	+123
27	40	—	14,475	+40	26	284	40	18,470	+244
May 4	—	10	14,376	-10	May 3	81	—	19,059	+81
11	41	—	14,771	+41	10	82	—	19,141	+82
18	48	—	15,312	+48	17	319	40	19,994	+279
25	41	29	15,439	+12	24	12	80	19,891	-60
June 1	—	80	15,387	-80	31	—	244	18,919	-244
8	—	243	14,702	-243	June 7	237	162	18,066	+75
15	—	242	13,971	-242	14	13	—	17,836	+13
22	—	122	13,202	-122	21	—	118	17,537	-118
29	—	49	13,146	-49	28	—	357	16,750	-357
July 6	—	282	12,658	-282	July 5	—	243	15,823	-243
13	20	182	12,160	-162	12	50	400	14,454	-350
20	13	203	11,509	-189	19	—	441	13,883	-441
27	—	482	10,450	-482	26	—	488	12,343	-488
Aug. 3	—	282	9,079	-282	Aug. 2	—	405	18,881	-405
10	—	443	7,496	-443	9	—	581	8,825	-581
17	—	361	5,761	-361	16	—	331	7,013	-331
24	—	202	4,673	-202	23	—	370	5,904	-370
31	—	200	4,072	-200	30	—	162	5,171	-162
Sept. 7	—	161	3,649	-161	Sept. 6	—	284	4,613	-284
14	8	363	2,571	-355	13	—	289	3,546	-289
21	—	281	1,767	-281	20	—	165	2,744	-165
28	—	122	1,277	-122	27	42	82	2,091	-40
Oct. 5	—	80	789	-80	Oct. 4	44	81	2,348	-37
12	—	81	522	-81	11	170	82	3,021	+88
19	—	39	363	-39	18	209	—	3,849	+209
26	245	—	549	+245	25	288	—	4,353	+288
Nov. 2	323	—	913	+323	Nov. 1	193	—	5,495	+193
9	164	—	1,395	+164	8	40	143	6,480	-103
16	244	—	3,032	+244	15	291	59	7,629	+232
23	446	—	4,067	+446	22	246	41	8,614	+205
30	337	—	5,557	+337	29	1,055	—	10,604	+1,055
Dec. 7	372	—	6,871	+372	Dec. 6	630	6	12,870	+624
14	244	—	8,470	+244	13	562	—	15,233	+562
21	567	—	9,813	+567	20	124	13	16,648	+111
28	83	—	10,388	+83	27	—	13	17,415	-13

[1] Total approved Chi. Merc. Exch. warehouses. *Sources: U.S. Department of Agriculture; Chicago Mercantile Exchange* T.518

PORK BELLIES



Average Open Interest of Pork Bellies Futures at Chicago In Contracts

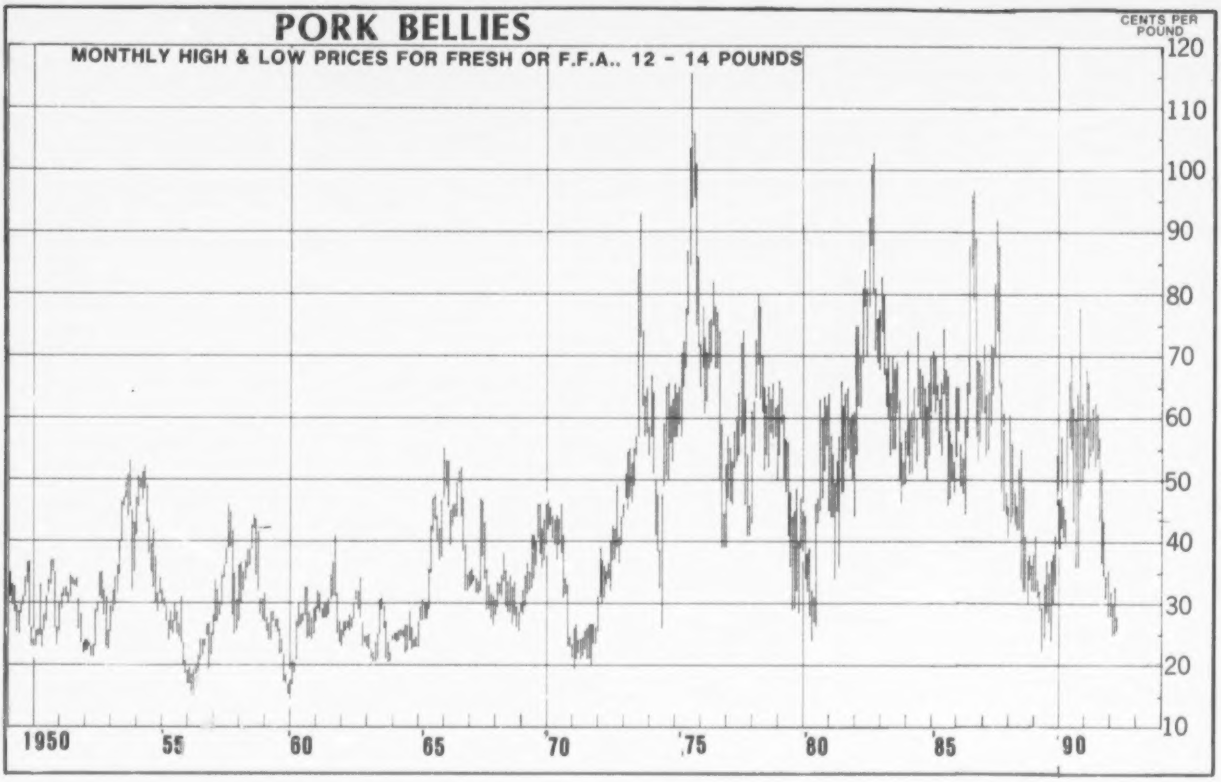
Year	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	16,767	21,677	21,592	26,053	26,108	22,910	16,283	14,225	16,509	17,426	19,459	19,117
1983	21,563	18,760	17,633	18,029	17,012	17,488	16,560	12,570	14,172	17,374	18,916	20,814
1984	19,762	16,732	16,932	18,932	17,465	17,397	13,661	7,781	7,845	9,297	11,583	12,769
1985	13,804	14,545	13,138	12,356	11,526	11,315	9,770	6,878	6,710	7,507	8,481	9,018
1986	8,313	7,969	7,357	8,635	9,509	10,781	9,135	7,462	8,515	8,287	10,412	11,440
1987	11,617	10,159	10,936	13,586	14,277	12,863	11,291	8,940	8,301	9,550	9,924	11,846
1988	11,250	10,942	13,421	16,229	17,887	18,428	15,782	11,874	14,678	15,860	19,292	19,723
1989	20,453	20,444	21,897	22,117	24,931	25,898	20,053	12,724	11,916	12,501	14,802	13,844
1990	12,885	12,114	13,017	15,338	14,513	13,083	11,146	6,104	6,059	7,851	11,419	12,589
1991	11,777	10,187	9,776	11,509	10,436	10,111	7,356	6,176	7,532	10,813	13,173	12,844
1992	12,521											

Source: Chicago Mercantile Exchange T.520

Volume of Trading of Pork Bellies Futures at Chicago In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	196,040	216,333	263,431	265,863	301,763	248,825	217,434	229,207	188,129	224,449	227,482	232,688	2,811,674
1983	276,556	229,198	207,543	225,034	226,617	227,522	218,813	169,113	132,894	154,642	159,982	175,363	2,403,277
1984	221,795	182,080	186,817	159,774	207,820	173,066	187,619	119,469	77,028	121,926	148,940	121,711	1,908,045
1985	173,488	137,334	133,509	148,489	149,809	135,319	136,026	89,784	77,326	99,291	85,377	91,634	1,457,386
1986	92,033	81,768	75,830	96,642	106,958	100,331	109,981	78,967	91,470	87,712	91,779	86,868	1,100,339
1987	104,134	95,108	92,707	118,107	112,112	120,598	118,996	89,564	60,670	66,423	53,903	64,688	1,097,010
1988	70,150	76,741	85,947	99,754	116,780	179,505	112,356	90,371	79,667	94,646	84,236	96,446	1,186,599
1989	107,577	89,922	84,768	90,353	145,975	152,207	119,733	91,200	75,155	106,389	141,983	105,714	1,310,976
1990	109,036	100,813	129,476	133,946	165,880	143,663	122,187	74,653	53,428	76,549	112,752	80,746	1,303,129
1991	106,078	89,975	88,056	111,195	119,773	96,273	74,255	59,176	65,604	80,707	63,331	50,773	1,005,196

Source: Chicago Mercantile Exchange T.521



High, Low & Closing Prices of May Pork Bellies Futures at Chicago In Cents per Pound

Year of Delivery		Year Prior to Delivery										Delivery Year					Life of Delivery Range
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1984	High	65.40	65.95	65.90	61.90	64.75	71.55	66.80	64.40	65.60	67.40	71.30	68.10	71.07	74.10	70.65	74.10
	Low	61.25	62.80	60.00	56.00	54.70	61.50	59.50	58.35	60.32	60.40	62.12	59.25	60.55	65.50	64.35	54.70
	Close	64.90	64.72	61.00	57.15	61.90	65.37	59.37	64.22	62.30	63.62	67.27	60.70	69.22	65.82	65.42	—
1985	High	79.95	80.50	79.00	82.47	77.70	69.50	67.70	68.52	76.50	79.00	79.15	74.90	75.40	71.52	66.30	82.47
	Low	67.00	74.95	73.80	75.40	63.70	63.15	61.05	62.50	67.90	70.75	70.75	67.47	70.20	63.10	59.80	59.80
	Close	78.50	75.30	74.65	77.75	64.75	66.80	62.62	68.15	76.40	78.52	72.75	70.72	71.82	65.65	65.65	—
1986	High	75.60	75.25	74.57	75.27	70.00	64.35	64.85	67.52	66.65	67.80	66.90	63.45	61.67	58.55	65.75	75.60
	Low	69.00	70.55	69.80	69.70	59.50	57.05	57.25	62.35	60.00	63.00	62.35	54.40	54.37	49.65	57.65	49.65
	Close	75.35	73.70	74.12	70.30	62.95	59.65	64.85	63.65	66.45	64.90	63.50	55.85	55.87	58.55	59.85	—
1987	High	63.15	63.20	62.50	70.80	78.20	76.40	79.87	69.70	72.95	72.20	68.22	66.85	71.25	76.70	78.72	79.87
	Low	61.50	58.40	59.20	58.20	64.92	69.85	66.37	63.90	63.00	65.20	61.90	58.35	61.20	64.75	70.70	58.40
	Close	62.77	62.20	61.10	66.92	75.40	73.85	66.45	66.25	71.62	65.77	64.45	61.40	68.97	75.10	72.00	—
1988	High	56.25	59.95	75.60	64.85	66.55	67.75	62.50	60.65	58.75	56.00	61.40	60.20	57.55	58.05	55.27	75.60
	Low	54.40	51.00	57.80	59.00	58.50	60.95	56.45	54.40	54.45	51.10	52.27	52.92	52.10	51.10	50.90	50.90
	Close	54.50	59.45	60.20	59.00	66.55	61.90	57.10	56.90	55.70	52.35	55.75	53.27	56.12	51.35	54.02	—
1989	High	—	—	62.00	65.50	59.70	57.25	54.50	54.25	49.85	48.25	47.17	42.35	40.30	36.70	36.65	65.50
	Low	—	—	59.25	57.15	52.55	50.97	48.50	48.47	44.25	44.25	40.85	37.55	36.50	30.70	30.47	30.47
	Close	—	—	62.00	60.27	52.90	50.97	54.40	48.67	47.02	45.50	41.40	38.30	37.35	31.37	34.32	—
1990	High	54.40	49.90	54.50	53.35	49.80	46.70	50.80	55.47	63.75	58.05	59.50	56.70	54.90	66.65	71.67	71.67
	Low	50.60	47.10	46.85	48.05	41.15	39.50	44.40	46.60	54.85	48.25	49.25	50.60	48.37	53.75	61.50	39.50
	Close	51.70	47.25	48.40	51.80	41.55	45.70	48.90	55.47	57.30	50.65	52.05	52.45	53.57	66.65	67.40	—
1991	High	58.30	61.40	61.10	63.35	57.60	59.00	59.40	68.15	73.12	66.70	70.72	66.55	68.42	68.50	67.45	
	Low	57.40	57.70	58.25	54.25	49.50	51.15	50.85	59.45	60.45	61.00	61.10	59.45	62.40	61.10	57.95	
	Close	57.67	58.90	60.15	54.25	57.60	51.15	58.67	60.67	65.65	63.60	66.30	63.80	67.80	66.30	60.22	

Source: Chicago Mercantile Exchange

T.519

Potatoes

U.S. potato acreage expanded in 1991/92, reflecting the unusual strength of prices in the late 1980s, the lack of attractive crop alternatives, and continued strong demand. Fall acreage of almost 1.20 million, 2 percent higher than in 1990/91, was the largest since the 1940s. The acreage together with improved yields resulted in a fall crop in excess of 370 million cwt., versus 353 million in 1990.

Total 1991/92 production in the U.S. was a record 417 million cwt. and compared with 393 million for 1990/91 and the previous record of 400 million in 1985. During the 1980s, the total U.S. crop averaged close to 360 million cwt., of which the fall crop accounted for more than 300 million.

U.S. potato production is divided into four seasonal groups. The fall crop, harvested in September through November, dominates. The winter crop, January-March, is the smallest, and the spring, April-June, and summer crops, July-September, are fairly close in size. Generally, the marketing season follows the harvest; for the fall crop it may extend into the following July, as potatoes are moved out of storage.

All fifty states produce potatoes. The largest producers are Washington and Idaho, with the latter's fall crop in recent years averaging more than 100 million cwt. Two dozen states comprise the fall grouping, and eighteen or so account for the summer crop. The sharp seasonal disparity reflects not only planted acreage, but realized yield, which is much higher in the fall.

Processing now accounts for more than half of production. For the 1990/91 crop, processing used a record 224 million cwt., up 11 percent from the previous year and 16 percent over two years earlier. French fry production accounts for almost half of all processing, while chip and shoestring processing takes about 22 percent, and 18 percent or so goes into dehydration. Table stock use tends to fluctuate from year to year, having reached 125 million cwt. in 1987/88 and falling back to 118 million in 1990/91. Some 20 to 23 million cwt. are sold each year for seed use, and almost another 5 million are used for seed on farms.

The U.S. exports and imports potatoes and products. Imports, mostly from Canada, are small, totaling 1 million cwt. in the first half of 1991. Potato starch from the Netherlands often accounts for most of the imports. U.S. exports are mostly french fries, and Japan is the usual destination.

The retail price for fresh potatoes averaged 34.3 cents a pound in the first half of 1991, and the price for tablestock was likely to hold steady as consumers sought inexpensive foods during recessionary times. Retail frozen french fry prices, which rose 11 percent in 1990, gained 1 percent during the first half of 1991, averaging about 83 cents/lb. Chip prices dipped in 1991, falling from almost $3/lb. to $2.93 by mid-year, reflecting the recession.

Salient Statistics of Potatoes in the United States

Crop Year	Acreage		Yield Per Harv. Acre Cwt.	Total Production Mil. Cwt.	Farm Disposition Used Where Grown			Farm Price $ Cwt.	Value of		Stocks on Jan. 1[4] 1,000 Cwt.	Foreign Trade[5] (Fresh)		Consumption[5] Per Capita — In Lbs. —	
	Planted	Harvested			Seed & Feed	Shrinkage & Loss	Sold[3]		Prod.[2]	Sales		Dom. Exports	Imports	Fresh	Total
	— 1,000 Acres —				— Million Cwt. —				— Million $ —			— Mil. Lbs. —			
1983	1,272	1,242	269	333.7	6.0	24.7	303.3	5.82	1,936	1,764	178,980	283.2	279.6	49.8	118.5
1984	1,337	1,298	279	362.0	5.7	30.1	326.7	5.69	2,046	1,856	165,330	360.3	253.6	48.3	121.9
1985	1,409	1,359	299	406.6	8.1	52.8	346.2	3.92	1,571	1,355	173,380	329.9	300.5	46.3	122.4
1986	1,257	1,220	296	361.7	6.3	28.3	326.9	5.03	1,808	1,645	202,800	340.6	280.8	48.8	125.8
1987	1,317	1,293	301	389.3	5.7	31.9	351.8	4.38	1,683	1,539	180,915	363.2	402.8	47.9	125.8
1988	1,285	1,259	283	356.4	5.8	25.1	325.6	6.02	2,144	1,958	196,760	422.0	388.4	49.6	122.2
1989	1,305	1,282	299	324.7	5.7	25.0	339.7	7.36	2,717	2,501	177,750	467.8	509.3	50.1	127.5
1990[1]	1,400	1,371	293	402.1	4.7	28.3	367.8	6.08	2,431	2,240	173,550	350.1	482.9	47.4	129.3
1991[1]	1,403	1,371	304	417.1							194,460	390.8	500.0	50.1	133.4

Note: 60 pounds equals one bushel. [1] Preliminary. [2] Farm weight basis. Excludes canned & frozen potatoes. [3] For all purposes, including food, seed processing livestock feed. [4] Merchantable stocks held by growers & local dealers. [5] Calendar year.

Source: National Agricultural Statistics Service, U.S.D.A.

T.522

U.S. Cold Storage Stocks of All Frozen Potatoes (First of Month) In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	767.3	800.1	879.9	899.8	958.0	986.6	1,015.3	823.2	603.8	637.2	775.2	817.4
1984	773.0	754.8	783.9	827.6	808.2	843.3	840.4	626.8	516.5	635.3	821.3	884.2
1985	892.3	900.0	943.4	1,003.3	1,023.6	1,081.6	1,058.4	828.2	735.4	861.4	1,014.2	1,020.2
1986	1,012.3	907.0	950.4	1,017.3	1,075.7	1,126.5	1,096.9	958.1	733.4	771.2	904.1	941.2
1987	894.1	786.7	795.9	856.6	886.7	962.9	1,003.3	816.4	675.5	774.2	947.5	966.1
1988	882.6	899.0	977.7	965.1	950.7	963.9	1,000.8	882.5	835.0	917.9	1,047.5	1,044.4
1989	988.7	927.4	944.3	947.3	968.7	986.7	961.5	739.9	611.3	734.2	878.7	938.0
1990[1]	917.3	932.7	995.6	1,041.2	1,059.0	1,061.3	977.6	769.3	688.1	852.5	995.6	999.5
1991[1]	975.8	993.3	988.9	1,041.5	1,052.3	1,167.2	1,216.5	935.5	880.1	1,009.8	1,148.0	1,037.2

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.*

T.529

Potato Crop Production Estimates, Stocks & Disappearance in the U.S. In Millions of Cwt.

	Crop Production Estimates					Total Storage Stocks[2]						Disappearance of Previous Fall Crop Until					
	Total Crop			Fall Crop			Following Year						Following Year				
Year	Oct. 1	Nov. 1	Dec. 1	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1
1980	296.9	296.9	301.0	260.7	260.7	172.0	147.0	122.1	97.7	72.7	44.5	84.1	110.0	135.0	160.0	186.0	
1981	329.9	329.9	333.7	287.1	287.1	193.6	164.4	137.8	111.8	82.3	50.8	93.6	121.0	149.0	175.0	204.0	
1982	350.0	350.0	349.3	306.9	308.9	206.5	179.0	150.2	122.5	90.1	57.3	92.3	121.0	149.0	178.0	209.0	
1983	329.8	329.8	325.7	292.7	292.7	192.5	165.3	138.9	112.7	81.7	50.4	90.7	117.0	143.0	169.0	200.1	
1984	358.8	358.8	361.6	310.0	310.0	201.4	173.4	144.8	118.4	86.4	52.5	130.0	159.0	187.0	217.0	251.0	
1985	—	400.4	404.1	—	346.1	235.5	202.8	171.5	138.7	104.5	65.4	139.0	171.0	203.0	238.0	277.0	
1986	—	352.3	352.3	—	307.5	209.4	180.9	154.5	128.7	95.1	59.8	96.8	124.0	150.0	176.0	209.0	250
1987	—	361.5	—	—	342.7	225.9	196.8	167.3	138.8	105.9	70.0	110.0		166.0	195.0	220	262.0
1988	—	352.1	—	—	309.9	206.4	177.8	151.1	124.5	92.6	59.4	101.0	130	155.0	180.0	213.0	245.0
1989	—	367.3	—	—	322.7	202.1	173.6	144.3	116.6	84.3	50.7	115.0	143.0	173.0	200.0	233.0	266.0
1990[1]	—	393.2	—	—	342.5	225.5	194.5	162.9	134.5	101.2	63.0	119.0	150.0	182.0	210.0	244.0	282.0
1991[1]	—	417.1	—	—	371.0	240.7	210.9	179.0				123.0	153.0	185.0			

[1] Preliminary. [2] Held by growers & local dealers in the fall producing areas. *Source: Crop Reporting Board, U.S.D.A.* T.525

United States Potato Production by Seasonal Groups In Millions of Cwt.

		Spring			Summer			Fall								
Year	Winter	Florida	Calif.	Total Spring	New Mex.	Va.	Total	Maine	Wisc.	Minn.	Colo.	No. Dak.	Wash.	Idaho	Oregon	Total Fall
1980	2.4	3.6	8.8	17.1	.9	1.5	17.2	25.0	16.0	9.9	11.0	15.7	43.9	79.8	19.7	267.2
1981	2.2	5.3	10.3	20.8	1.3	2.3	20.5	26.5	18.2	13.3	11.6	20.1	52.9	84.5	21.7	297.1
1982	2.3	5.7	9.6	21.0	2.2	2.5	22.8	27.0	22.6	11.5	12.8	17.3	52.8	91.8	21.1	309.1
1983	2.2	5.1	8.3	18.3	1.6	1.0	18.5	22.6	18.9	10.3	14.0	20.5	54.1	86.0	20.7	294.7
1984	2.6	6.7	11.1	24.0	2.6	1.5	22.7	21.4	21.4	13.8	17.2	20.6	56.9	86.6	23.5	312.7
1985	2.7	6.6	10.6	23.0	2.9	3.3	27.3	28.2	24.1	14.1	17.9	23.6	63.6	102.5	26.9	353.6
1986	3.0	7.0	7.6	19.9	2.8	1.1	20.7	21.9	20.1	13.7	18.8	21.6	62.0	90.2	23.2	318.2
1987	2.5	5.6	7.9	19.0	3.5	2.0	22.8	23.2	22.1	16.3	19.5	24.1	67.0	99.7	25.9	345.0
1988	2.6	6.8	7.5	20.1	3.1	2.0	20.2	22.0	20.0	12.1	19.0	15.5	63.3	102.6	20.7	313.6
1989	2.8	6.9	7.9	20.9	4.0	1.4	22.2	22.0	23.1	13.9	20.6	15.1	64.3	102.5	23.3	324.7
1990	2.3	8.7	8.4	24.2	3.4	2.0	23.1	20.5	23.1	14.3	22.1	16.7	65.9	112.3	23.0	342.5
1991[1]	2.6	6.6	8.3	20.6	3.9	1.5	23.1	18.2	23.3	17.2	23.8	30.0	75.4	122.2	22.2	363.8
1992[1]	2.7															

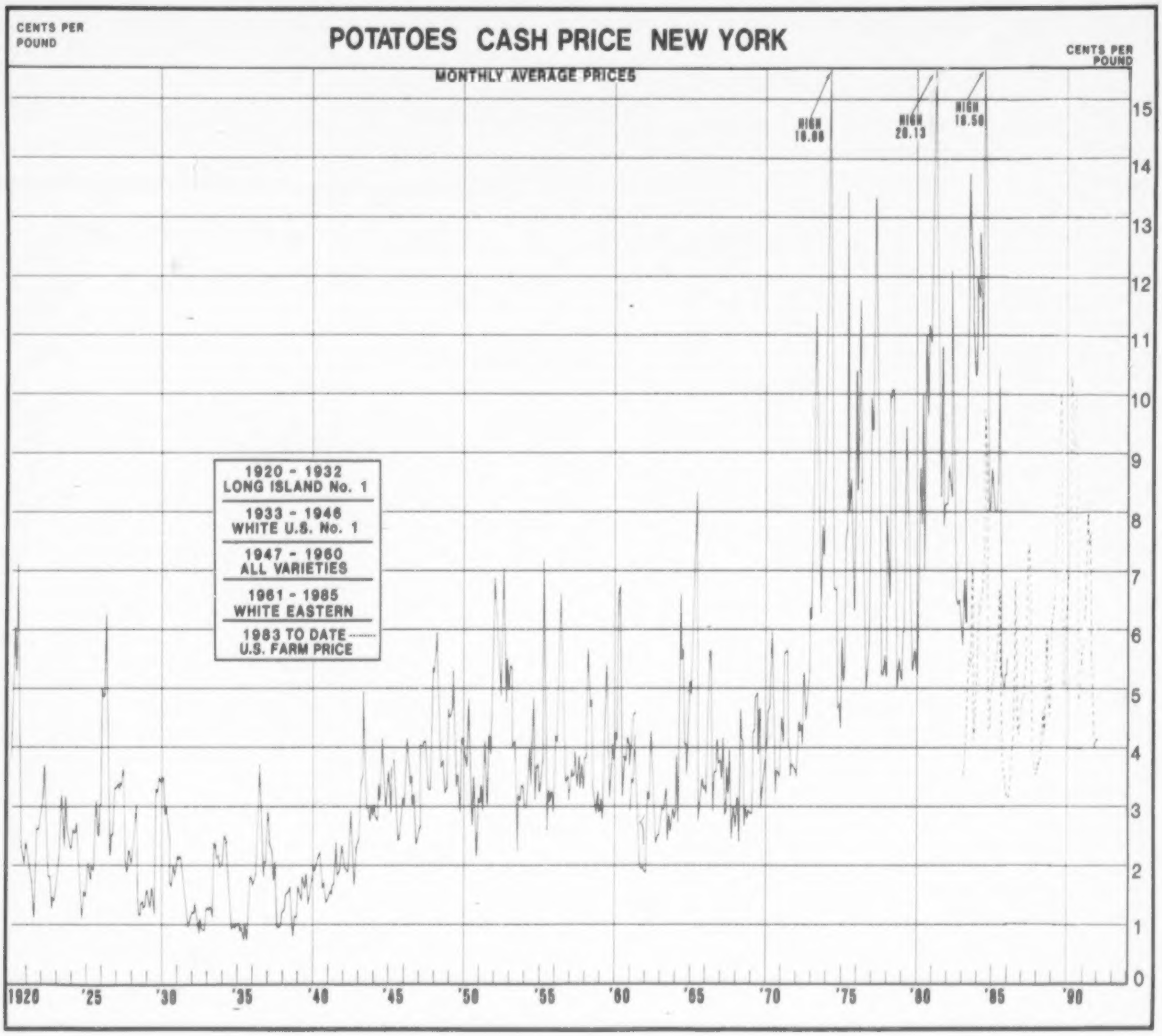
[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.524

Utilization of Potatoes in the United States In Millions of Cwt.

	Sales											Non-sales			
		For Processing							Other Sales						
Crop Year	Table Stock	Chips, Shoestrings	For dehydration	Frozen French Fries	Other Frozen Pdt's	Canned Potatoes	Other Canned Pdt's[2]	Starch & Flour	Livestock Feed	Seed	Total Sales	Used on Farms Where Grown	Shrinkage & Loss	Total Non-sales	Total
1980	96.8	37.9	28.2	67.2	13.7	2.1	2.0	2.2	3.9	19.2	273.1	5.0	23.2	29.6	302.9
1981	112.0	39.3	29.9	79.8	16.8	2.5	1.7	2.3	3.6	20.4	308.3	4.5	26.3	32.3	340.6
1982–3	120.3	40.7	27.7	76.0	17.3	2.7	1.8	4.6	6.2	19.5	316.8	4.7	31.0	38.3	355.2
1983–4	107.3	43.3	26.8	74.4	19.7	2.1	2.0	3.0	3.8	20.9	303.3	4.6	24.7	30.6	333.9
1984–5	113.8	42.3	27.8	87.4	20.3	2.6	1.8	3.4	4.7	22.6	326.7	4.4	30.1	35.9	362.6
1985–6	125.3	42.2	30.0	94.7	17.9	3.0	1.6	3.5	8.1	20.0	346.2	5.1	52.8	60.9	407.1
1986–7	109.3	45.8	28.4	96.2	15.7	2.8	1.3	2.8	4.0	20.7	327.1	5.1	28.4	34.6	361.7
1987–8	129.6	40.5	30.8	101.4	18.3	3.0	1.6	2.2	3.8	21.0	351.8	4.5	31.9	37.6	389.3
1988–9	108.3	44.5	28.8	95.5	17.6	2.9	2.0	1.4	3.3	21.1	325.6	4.8	25.1	30.9	356.4
1989–90	113.9	43.1	32.2	100.5	19.1	3.1	1.9	.9	2.8	22.3	339.7	4.7	25.0	30.7	370.4
1990–1[1]	118.0	46.1	38.8	108.7	23.5	2.5	2.3	1.7	3.3	22.3	367.8	5.0	28.3	34.3	402.1

[1] Preliminary. [2] Hash, stews, soups. [3] Includes 12.0 sold for livestock feed & starch under the U.S.D.A. diversion program.
Source: Crop Reporting Board, U.S.D.A. T.531

POTATOES



U.S. Average Price Received by Farmers for Potatoes In Dollars Per Cwt.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Avg.[1]
1981	7.38	7.51	8.12	8.41	8.22	9.13	9.67	7.06	4.84	4.01	4.44	4.65	5.42
1982	4.71	4.78	5.03	5.59	6.21	7.11	6.52	5.80	4.25	3.78	3.73	3.71	4.45
1983	3.53	3.69	4.07	4.65	5.52	5.33	6.36	7.03	4.94	4.14	4.87	5.46	5.82
1984	6.43	6.29	6.55	6.69	7.04	7.52	9.72	8.75	4.87	4.26	4.60	4.90	5.69
1985	5.22	5.31	5.40	5.80	6.44	6.67	5.84	3.83	3.56	3.51	3.46	3.26	3.92
1986	3.12	3.35	3.50	3.99	4.39	4.79	6.91	5.68	4.28	4.20	4.63	4.78	5.03
1987	5.01	4.93	5.05	5.66	7.23	6.94	7.06	4.52	3.89	3.74	3.62	3.63	4.38
1988	3.70	3.74	4.02	4.11	4.62	4.30	5.28	5.91	4.55	4.30	5.72	5.79	6.02
1989	6.24	6.43	7.34	8.33	8.78	8.61	10.60	7.58	5.06	5.03	6.32	6.81	7.36
1990	7.36	7.71	7.17	10.30	9.32	8.96	9.50	8.09	5.36	4.73	5.24	5.46	6.08
1991[2]	5.65	5.53	6.15	7.03	7.98	7.42	7.62	5.52	4.56	4.17	4.00	4.14	5.05
1992[2]	4.11												

[1] Annual weighted average by sales. [2] Preliminary. *Source: Statistical Reporting Service, U.S.D.A.* T.530

United States Potatoes Processed[1], Eight States In Thousands of Cwt.

States	Storage Season	to Dec. 1	to Jan. 1	to Feb. 1	to Mar. 1	to Apr. 1	to May 1	Entire Season
Idaho and Malheur Co., Oregon	1985–6	17,830	22,980	26,660	32,170	37,910	43,240	55,220
	1986–7	13,200	17,980	21,910	27,070	33,360	38,970	55,470
	1987–8	18,260	23,320	28,680	34,340	40,380	46,440	64,495
	1988–9	18,740	24,270	29,420	34,720	41,360	48,080	64,425
	1989–90	22,200	28,140	34,240	40,270	46,330	51,810	66,010
	1990–1	24,780	31,100	37,550				
	1991–2							
Maine[2]	1983–4	1,160	1,745	2,260	2,780	3,370	3,970	5,125
	1984–5	1,820	2,410	3,015	3,520	4,330	5,185	6,830
	1985–6	2,215	2,935	3,845	4,630	5,540	6,280	8,660
	1986–7	2,100	2,835	3,345	3,865	4,500	5,195	6,995
	1987–8	1,770	2,440	3,145	3,745	4,410	4,865	6,745
	1988–9	1,685	2,190	2,830	3,455	4,230	4,915	6,915
	1989–90	2,055	2,660	3,510	4,000	4,620	5,210	6,900
	1991–2	2,105	2,690	3,420				
	1990–1							
	1991–2							
Wash. and other areas, Oregon	1983–4	16,245	19,920	23,690	28,250	33,280	37,455	45,800
	1984–5	20,745	24,690	29,345	33,560	38,815	43,380	51,670
	1985–6	21,725	25,665	29,450	34,450	39,990	45,110	57,430
	1986–7	21,530	25,510	28,530	33,595	39,610	44,865	56,910
	1987–8	22,265	25,950	30,790	35,800	40,900	44,925	58,085
	1988–9	19,200	23,455	27,280	31,960	37,575	41,795	51,555
	1989–90	23,635	28,015	33,170	38,610	44,510	49,595	57,695
	1990–1	24,480	29,830	35,170				
	1991–2							
Other States[3]	1983–4	4,305	6,005	7,755	9,600	11,615	13,400	16,320
	1984–5	5,695	7,510	9,210	10,930	12,745	14,715	21,005
	1985–6	6,470	7,990	9,900	12,020	13,860	16,095	22,245
	1986–7	6,240	8,405	10,330	12,320	14,690	16,750	20,975
	1987–8	5,750	7,370	9,200	11,250	13,305	15,270	20,155
	1988–9	5,805	7,450	9,040	10,645	12,340	14,075	18,385
	1989–90	6,340	8,010	9,860	11,535	13,240	15,100	20,610
	1990–1	6,585	8,755	10,645				
	1991–2							
Total	1983–4	37,465	48,115	58,490	70,170	83,420	95,465	121,055
	1984–5	47,260	58,920	70,770	82,020	95,400	107,930	136,915
	1985–6	48,240	59,570	69,855	83,270	97,300	110,725	143,555
	1986–7	43,070	54,730	64,115	76,850	92,160	105,780	140,350
	1987–8	48,045	59,080	71,815	85,135	98,995	111,500	149,480
	1988–9	45,430	57,365	68,570	80,780	95,505	108,865	144,280
	1989–90	54,230	66,825	80,780	94,415	108,700	121,715	151,215
	1990–1	57,950	72,375	86,785				

[1] Total quantity received and used for processing regardless of the state in which the potatoes were produced. Does not include quantities used for potato chips in Maine, Mich., Minn., N. Dak. or Wis. [2] Includes Maine grown potatoes only. [3] Mich., Minn., N. Dak. and Wis.
Source: Crop Reporting Board, U.S.D.A. T.524a

Potatoes U.S. Total Per Capita Utilization In Pounds (Farm Weight)

Year	Total	Fresh	Freezing	Chips[2]	Dehy-drating	Can-ning
1981	116.0	45.7	41.2	16.8	10.5	1.8
1982	114.4	46.8	38.4	17.2	10.1	1.9
1983	118.1	49.7	38.9	17.9	9.7	1.9
1984	122.1	48.8	43.4	18.1	10.0	1.8
1985	122.4	46.7	45.1	17.7	11.1	1.9
1986	125.7	49.4	45.8	18.2	10.5	1.8
1987	125.9	48.9	47.1	17.7	10.4	1.8
1988	123.2	51.4	42.6	17.3	10.0	1.9
1989[1]	126.2	49.8	46.1	17.8	10.5	2.0

[1] Preliminary. [2] Includes shoestrings. *Source: Economic Research Service, U.S.D.A.*

Rapeseed (Canola)

World rapeseed or canola production in 1991/92 was forecast to expand by 7 percent to 27 million tonnes. Production has been trending higher for several years. Most of the major growers were expected to harvest larger crops, with the exception of India and the Eastern European countries.

China remained the leading producer with a crop forecast at about 7.1 million tonnes, some 2 percent larger, as more acreage was planted. The EC was due to harvest 7.3 million tonnes, up 19 percent, as acreage and yields increased. Germany, France and Britain were the chief EC producers. India's outturn was put at 5 million tonnes. The country's yields remained low, but that was offset by the amount of land devoted to the crop. Canada's crop of 4.2 million tonnes, up almost 30 percent, was the result of an increase in acreage. The Eastern European countries were forecast to produce about 1.6 million tonnes, or 5 percent less. Poland remained the largest producer in that region.

Trade in rapeseed was slated to expand by over 5 percent to 4.5 million tonnes. Canada has traditionally been the largest exporter. The EC imports canola for processing and exports some of the meal and oil. The Eastern European countries have been net exporters, led by Poland. Since more varieties of rapeseed fit for human consumption are being grown, trade is expanding. A major importer is Japan.

The global canola crush was due to reach 24.7 million tonnes, almost 4 percent more than a year earlier. The major processors were the EC and China. World ending stocks in 1991/92 were to increase by nearly 50 percent to 1.2 million tonnes.

With the greater crush, world rapeseed meal production was projected to reach 15.4 million tonnes, almost 4 percent more than the year before. Rape meal is a high-protein feed, though its protein content differs by variety and is lower than soymeal. The largest producers are the EC and China. Most rape meal output is consumed domestically. World meal exports were estimated at 2.7 million tonnes, up 5 percent from a year before. Consumption of rape meal was slated to rise by 5 percent to 15.3 million tonnes. The EC and Eastern Europe were the major consumers of the meal. Global ending stocks of rape meal were projected to be 8 percent less than a year earlier.

In terms of world vegetable oil production, canola oil ranks third, following soyoil and palm oil. Consumption of canola oil has risen because of the development of varieties that are low in erucic acid and glucosinolates, both of which are harmful to humans. The new low-erucic varieties are grown primarily in Canada, the U.S., and the EC. Gradually, these types may replace the high-erucic varieties grown in many parts of the world. World rape oil production in 1991/92 was put at over 9 million tonnes, almost 5 percent more than a year earlier. Exports were forecast to rise slightly to just over 1.9 million tonnes. The major exporters were Germany, France, and Canada. World consumption of rape oil was expected to rise by 4 percent from a year earlier. Ending stocks were forecast to grow by over 20 percent to 540,000 tonnes.

One development in the U.S. has been the increase in production of low-erucic canola. U.S. acreage in 1991/92 was expected to total about 130,000. A reason for the interest in production is that canola is low in saturated fat, even lower than safflower, and can be used in salad and cooking oils and baking and frying fats. Use of canola in the U.S. was projected to reach 350,000 tonnes in 1991/92, having risen significantly over the past five years. Canola meal can be fed with success to dairy cows, but is less effective for poultry. U.S. canola production was expected to increase in the future, though the rate of growth was to be limited by competing oilseeds, like soybeans.

Futures Market

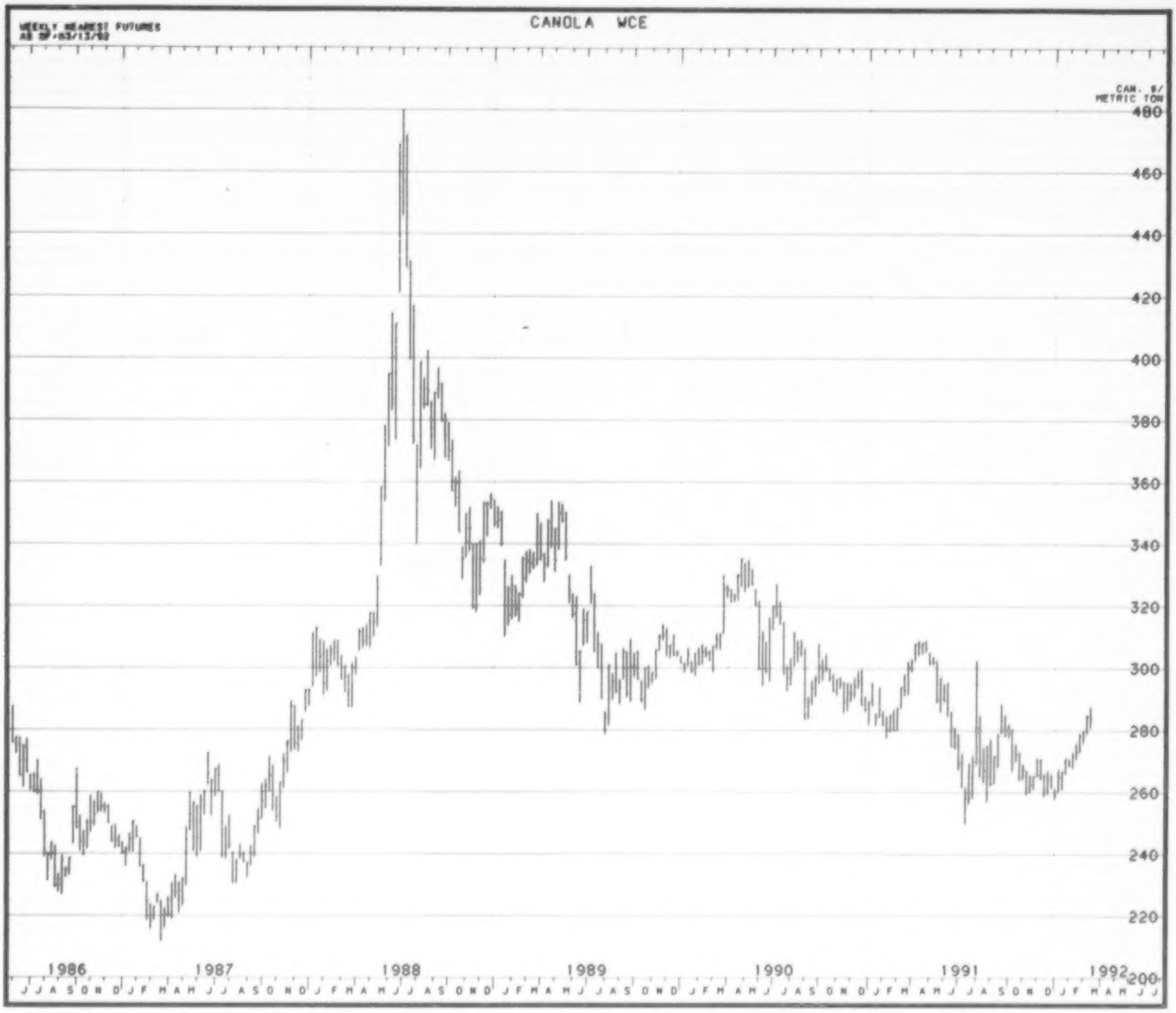
Canola futures are traded on the Winnipeg Commodity Exchange.

World Production of Rapeseed In Thousands of Metric Tons

Year[2]	Bangladesh	Canada	China	Czechoslovakia	Denmark	Germany	France	India	Pakistan	Poland	Sweden	United Kingdom	U.S.S.R.	Yugoslavia	World Total
1978	137	3,497	1,868	166	91	318	568	1,860	248	691	289	155		73	10,721
1979	118	3,411	2,402	80	150	201	510	1,428	247	233	264	198		93	10,808
1980	122	2,484	2,384	214	225	277	1,103	2,002	252	572	285	300		68	11,104
1981	123	1,849	4,065	200	290	284	990	2,382	238	496	282	325		65	12,345
1982	120	2,225	5,656	178	334	307	1,147	2,207	246	533	320	580		79	14,804
1983	131	2,609	4,287	314	309	260	906	2,608	217	554	318	565		103	14,259
1984	140	3,412	4,205	300	474	305	1,305	3,073	234	911	327	925		124	16,935
1985	261	3,498	5,607	285	544	381	1,340	2,681	250	1,073	320	895	74	126	18,699
1986	229	3,787	5,881	306	618	370	1,071	2,605	217	1,298	321	940	110	131	19,550
1987	222	3,847	6,605	337	556	400	2,645	3,455	204	1,192	250	1,353	296	88	23,435
1988	200	4,311	5,044	380	504	424	2,302	4,200	243	1,199	248	1,040	420	68	22,531
1989	210	3,096	5,436	387	655	1,908	1,765	3,800	260	1,600	370	976	423	75	22,017
1990[1]		3,281	6,958	380	793	2,165	1,937	5,320	245	1,206	367	1,231	506		25,534
1991[3]		4,250	6,800	410	712	2,913	2,284	5,000	245	1,110	254	1,308	355		26,983

[1] Preliminary. [2] Harvest generally occurs in the first half of the calendar year given in all major producing countries except Canada.
[3] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.*

T.533



World Supply & Distribution of Rapeseed & Products In Thousands of Metric Tons

Crop Year	Rapeseed					Rapeseed Meal					Rapeseed Oil				
	Production	Exports	Imports	Crush	Ending Stocks	Production	Exports	Imports	Consumption	Ending Stocks	Production	Exports	Imports	Consumption	Ending Stocks
1979–80	10,081	2,102	2,403	8,714	1,708	5,206	520	640	5,316	149	3,365	643	571	3,295	159
1980–81	11,104	2,305	2,366	10,477	1,489	6,297	808	636	6,075	199	3,933	814	756	3,914	210
1981–82	12,345	2,142	2,216	11,959	911	7,331	845	683	7,182	186	4,383	824	775	4,404	140
1982–83	14,804	2,469	2,540	13,826	740	8,449	768	871	8,500	238	4,991	841	790	4,925	155
1983–84	14,263	2,537	2,704	13,312	647	8,130	1,198	1,303	8,206	267	4,856	984	980	4,827	180
1984–85	16,935	3,153	3,291	15,369	1,033	9,419	1,463	1,451	9,454	220	5,602	1,298	1,199	5,497	186
1985–86	18,699	3,632	3,648	16,986	1,267	10,260	1,823	1,734	10,109	282	6,233	1,313	1,203	5,978	331
1986–87	19,550	4,577	4,923	18,439	1,037	11,112	1,692	2,225	11,568	359	6,849	1,662	1,409	6,540	387
1987–88	23,460	4,525	4,354	21,003	1,250	12,730	1,890	1,980	12,670	510	7,760	1,750	1,530	7,340	630
1988–89	22,730	4,232	4,470	20,590	1,740	12,470	2,530	2,390	12,440	400	7,660	1,770	1,800	7,610	720
1989–90	21,860	4,210	4,481	20,890	1,270	12,700	2,610	2,360	12,340	500	7,750	1,730	1,730	7,960	500
1990–91[1]	27,220	4,280	4,404	23,820	810	14,510	2,590	2,510	14,530	400	8,700	1,890	1,690	8,590	440
1991–2[2]	27,820	4,530	4,620	24,700	1,190	15,400	2,720	2,600	15,310	370	9,200	1,920	1,840	8,950	540

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.534a

RAPESEED

Wholesale Price of Rapeseed Oil, Refined (Denatured), in Tanks at N.Y. In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	56.4	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	58.8
1982	57.0	55.0	56.8	57.5	56.0	56.0	56.0	56.0	55.7	55.3	55.3	55.3	50.0
1983	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
1984	55.3	55.3	55.3	55.3	55.5	55.5	55.2	55.2	55.2	55.2	55.2	55.2	55.3
1985	55.2	55.2	55.2	N.A.	N.A.	68.3	67.9	64.0	62.5	62.5	62.5	60.5	61.4
1986	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.5	60.5	60.5	60.5	60.1
1987	60.50	62.00	62.50	62.50	64.25	69.50	69.50	65.00	63.50	63.50	63.50	63.50	64.15
1988	63.56	63.50	63.50	63.50	63.50	63.50	63.50	63.50	63.50	64.63	66.25	70.00	64.37
1989	70.00	70.00	80.25	80.25	80.25	80.75	80.25	80.25	80.25	80.25	80.25	80.25	78.58
1990	81.75	82.25	82.23	82.25	82.25	82.25	82.25	82.25	79.25	77.25	77.25	81.00	81.01
1991	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25	82.25				

Source: Economic Research Service, U.S.D.A. T.534

Month–End Open Interest of Rapeseed Futures in Winnipeg In 20–Tonne Units

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1981	17,615	15,959	17,138	18,427	18,377	16,241	15,338	14,386	15,666	16,359	16,602	13,658
1982	13,106	14,153	11,484	11,062	13,606	11,859	12,093	15,585	13,813	14,281	16,675	19,569
1983	16,950	16,989	17,401	17,857	16,398	13,786	15,755	20,715	21,315	18,888	17,639	18,063
1984	14,366	15,258	15,230	13,192	14,816	13,863	13,548	15,519	16,402	17,792	17,027	18,700
1985	19,122	22,206	21,260	22,202	19,611	17,591	17,675	19,058	16,757	14,511	14,717	17,232
1986	15,553	18,146	19,741	20,435	22,262	19,193	17,192	20,594	22,570	26,838	28,391	28,972
1987	25,143	32,141	34,152	31,564	30,761	28,903	26,599	24,083	25,075	25,893	23,049	26,576
1988	28,875	33,387	31,798	34,056	34,587	31,318	30,224	29,509	26,289	29,510	28,974	29,221
1989	22,435	20,889	18,591	22,690	24,587	21,025	22,280	22,027	16,153	21,556	20,981	21,749
1990	18,431	20,340	17,599	19,825	24,718	22,546	23,073	24,353	24,872	25,688	18,706	22,057
1991	22,000	22,829	24,815	26,637	30,072	28,240	28,288	27,547	27,558	29,079	23,880	20,117

Source: Winnipeg Commodity Exchange T.535

High, Low & Closing Prices of June Rapeseed Futures in Winnipeg In Dollars per Tonne

Year of Delivery	Year Prior to Delivery									Delivery Year						Life of Delivery Range
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
1984 High	—	—	—	359.5	434.0	467.4	452.5	435.2	424.5	431.4	412.0	426.5	502.2	724.0	724.0	724.0
Low	—	—	—	330.0	364.5	415.5	409.0	406.1	397.3	406.5	382.9	403.0	426.0	507.5	577.0	330.0
Close	—	—	—	350.5	423.6	447.5	409.7	407.8	421.5	410.2	403.5	426.5	502.2	704.0	577.0	—
1985 High	—	—	—	443.9	434.5	417.5	424.1	427.9	417.5	408.8	404.5	402.5	429.2	422.0	389.7	443.9
Low	—	—	—	409.5	413.5	406.5	414.9	415.3	389.8	388.0	395.5	391.4	393.2	361.5	379.0	361.5
Close	—	—	—	413.0	413.7	416.5	417.7	416.8	390.5	397.4	397.4	397.5	408.6	367.0	381.9	—
1986 High	422.5	424.0	409.5	400.4	370.0	357.0	351.5	315.5	347.3	346.7	329.8	316.7	306.5	295.0	277.5	424.0
Low	421.5	402.5	388.0	364.5	348.0	342.5	328.4	325.5	330.7	328.6	296.1	298.8	271.0	274.0	261.3	261.3
Close	421.5	403.2	388.0	368.5	352.8	342.5	328.4	333.6	342.2	329.5	300.6	305.7	291.5	275.8	267.7	—
1987 High	—	—	—	290.7	270.0	284.0	277.0	278.0	269.4	260.5	253.7	234.0	233.4	259.9	272.7	290.7
Low	—	—	—	290.2	254.0	255.0	258.5	266.8	256.5	251.0	224.1	216.0	218.8	229.1	240.7	216.0
Close	—	—	—	270.2	258.6	279.8	270.8	268.6	258.1	253.8	226.1	221.5	229.7	245.0	265.7	—
1988 High	—	—	—	285.0	262.5	273.6	284.0	300.4	307.0	323.5	309.9	303.4	317.8	378.3	431.0	431.0
Low	—	—	—	257.0	253.0	254.8	268.7	265.3	284.5	298.0	298.0	288.0	305.3	310.0	371.3	253.0
Close	—	—	—	265.2	257.3	270.5	269.6	292.8	306.2	300.2	301.7	301.6	317.6	376.2	431.0	—
1989 High	339.0	402.4	490.0	480.0	426.0	424.0	392.7	376.5	367.5	367.0	345.6	351.0	354.0	353.3	323.0	490.0
Low	322.2	338.0	397.0	380.0	393.5	387.5	355.5	339.3	344.5	323.8	323.6	334.5	327.5	316.2	288.7	288.7
Close	339.0	397.0	470.0	391.0	407.5	389.5	364.5	345.8	362.5	336.5	345.2	336.3	334.5	318.5	307.0	—
1990 High	—	—	—	334.5	339.2	336.8	329.0	331.0	322.5	319.2	318.7	330.0	335.4	334.9	312.0	339.2
Low	—	—	—	315.0	314.0	321.8	313.0	315.2	315.7	307.5	309.3	316.0	321.0	308.4	294.2	294.2
Close	—	—	—	315.0	331.5	325.3	320.4	321.1	317.4	311.3	315.8	325.3	329.9	309.5	306.8	—
1991 High	—	—	—	347.0	344.0	335.0	332.5	323.5	316.3	302.5	294.5	305.5	309.0	304.0	295.5	347.0
Low	—	—	—	326.0	322.5	322.7	319.4	309.0	298.9	286.2	284.7	292.5	301.0	285.7	274.0	274.0
Close	—	—	—	332.5	322.5	327.8	321.8	313.0	299.0	290.6	292.4	302.0	301.1	289.5	274.0	—
1992 High	—	—	296.0	304.0	326.4	310.4	303.0	286.4	278.6							
Low	—	—	287.5	267.0	283.0	291.3	284.1	276.9	269.2							
Close	—	—	287.5	304.0	290.0	302.0	284.3	277.0	270.5							

Source: Winnipeg Commodity Exchange T.536

Rayon and Other Synthetic Fibers

Worldwide Cellulosic Fiber Production In Thousands of Metric Tons

Year	Austria	Brazil	China	Finland	Germany East	Germany West	India	Japan	Poland	Romania	Taiwan	Un. Kingdom	United States	USSR	Yugoslavia	Total
1982	114.6	45.0	185.0	53.1	161.8	111.5	101.4	379.3	64.4	58.2	92.8	113.2	264.6	634.9	68.0	2,946
1983	121.1	40.4	130.4	57.6	165.1	114.0	116.1	387.8	69.4	59.5	101.5	140.2	290.3	599.9	72.0	2,929
1984	123.8	46.7	153.0	58.0	170.2	116.0	141.8	377.4	75.5	59.5	128.0	127.2	285.1	602.0	69.0	2,996
1985	123.9	46.6	181.0	60.0	167.8	119.0	141.9	387.9	71.1	61.8	121.9	79.2	253.0	586.0	69.9	2,931
1986	123.9	50.4	183.0	55.0	157.7	119.0	140.0	320.0	72.0	64.0	119.9	58.0	280.7	589.0	71.1	2,860
1987	120.0	48.9	187.0	54.0	156.6	118.0	167.5	300.5	73.3	66.0	119.6	55.0	274.6	591.5	63.3	2,825
1988	132.0	51.5	173.0	60.4	155.1	122.0	174.1	290.6	74.2	75.6	125.8	64.0	278.3	601.0	68.0	2,885
1989	136.0	55.0	180.0	64.8	149.4	129.0	198.7	272.9	61.7	70.9	147.6	55.0	263.3	584.0	71.1	2,877
1990[1]	135.0	55.0	203.0	63.8	132.1	130.0	216.7	275.8	35.7	72.2	147.9	71.0	229.2	561.0	73.0	2,846

[1] Preliminary. *Source: Textile Economics Bureau, Inc.* T.537

Worldwide Noncellulosic Fiber Production (Except Olefin) In Thousands of Metric Tons

Year	Brazil	China	France	W. Germany	India	Italy/ Malta	Japan	Korea Rep.	Mexico	Romania	Spain	Taiwan	Un. Kingdom	United States	USSR	Total
1982	198.1	384.0	190.1	669.0	106.2	428.7	1,302	612.5	232.5	153.0	231.4	630.9	204.3	2,602	587.8	10,145
1983	185.3	386.2	192.2	732.2	128.0	458.6	1,318	664.1	269.5	153.0	247.8	738.1	223.8	3,009	622.0	11,076
1984	215.8	559.4	191.7	731.0	162.3	527.8	1,369	746.5	300.2	174.4	260.4	871.8	240.0	2,937	658.3	11,805
1985	217.5	732.0	182.7	762.0	193.7	563.6	1,403	811.6	305.9	196.8	274.9	1,024	242.7	2,864	712.8	12,489
1986	237.0	747.4	167.2	745.0	220.7	576.9	1,356	862.4	296.3	199.7	276.2	1,232	208.2	2,919	757.8	12,927
1987	248.1	846.0	161.0	759.3	266.0	564.6	1,341	970.1	333.2	201.9	268.5	1,391	203.0	3,094	845.2	13,741
1988	239.7	1,074	174.8	751.1	321.6	564.2	1,352	1,115	339.0	203.0	265.4	1,430	193.5	3,147	868.8	14,394
1989	245.8	1,228	165.0	775.0	366.7	540.0	1,381	1,190	337.8	204.8	255.0	1,523	185.0	3,119	894.0	14,805
1990[1]	206.1	1,309	157.0	777.0	430.9	561.0	1,425	1,270	323.3	172.6	251.0	1,622	182.0	2,886	913.5	14,869

[1] Preliminary. *Source: Textile Economics Bureau, Inc.* T.538

World Production of Rayon & Other Synthetic Fibers In Thousands of Metric Tons

	Noncellulosic Fiber Production (Except Olefin)							Glass Fiber Production								
	By Fibers				World Total											
Year	Acrylic & Mod-Acrylic	Nylon & Aramid	Polyester	Other Fibers[2]	Yarn & Monofilaments	Staple & Tow & Fiberfil	Total	Europe[3]	United States	Other Americas	Japan	Other[4]	This Total	P.R.C. China	USSR	Cigarette Tow Production
1982	2,058	2,853	5,106	129	4,480	5,666	10,146	250	408	35	198	12	903	30	65	339
1983	2,221	3,196	5,535	124	4,867	6,209	11,076	290	530	37	206	14	1,077	30	65	334
1984	2,276	3,354	6,029	145	5,224	6,580	11,804	300	632	39	249	14	1,234	40	75	314
1985	2,381	3,442	6,502	164	5,578	6,911	12,489	320	610	32	273	28	1,263	50	85	337
1986	2,445	3,500	6,842	140	5,683	7,244	12,927	364	630	35	240	35	1,299	50	100	362
1987	2,521	3,638	7,438	144	6,040	7,701	13,741	407	725	50	300	50	1,517	55	110	400
1988	2,452	3,741	8,063	138	6,559	7,835	14,394	465	730	65	340	65	1,655	65	125	412
1989	2,357	3,806	8,490	151	6,809	7,995	14,804	470	735	65	345	65	1,680	70	133	438
1990[1]	2,326	3,765	8,621	157	6,973	7,896	14,869	445	675	60	371	60	1,611	75	120	462

[1] Preliminary. [2] Alginate, Azion, Spandex, Saran, etc. [3] West & East (excluding USSR). [4] Except USSR & China (P.R.C.)
Source: Textile Economics Bureau, Inc. T.539

Man-Made Fiber Production in the United States In Millions of Pounds

	Rayon & Acetate								Non-Cellulosic Fiber						Producers' Waste Shipments	
	Rayon Yarn				Staple & Tow											
Year	Indust.	Textile	Acet. Yarn	Total Yarn	Rayon	Acetate	Total	Total	Yarn	Staple	Total	Total Ray. & Acet. & Non-Cel	Textile Glass Fiber	Total Man-made Fiber	Rayon	Non-Cell.
1982	20.8	12.4	195.2	228.4	355.0	1.0	356.0	584.4	3,057.4	3,402.5	6,459.9	7,044.3	899.2	7,943.5	10.7	173.2
1983	25.0	11.2	227.6	263.8	374.8	1.4	376.2	640.0	3,568.0	3,971.0	7,538	8,178	1,167.2	9,335.9	9.4	214.1
1984	28.8	12.1	198.2	239.1	389.2	.4	389.6	628.7	3,524	3,947	7,472	8,100	1,394.0	9,494	11.4	216.9
1985	N.A.			204.6	352.7	.5	353.2	557.8	3,790	3,773	7,564	8,121	N.A.		8.8	260.2
1986	N.A.			214.8	403.7	.5	404.2	619.0	3,836	3,992	7,828	8,447	N.A.		10.4	261.5
1987	N.A.			191.1	413.8	.5	414.3	605.4	4,010	4,306	8,316	8,921	N.A.		9.6	239.1
1988	N.A.			213.9	399.8	N.A.	399.8	613.7	4,180	4,346	8,526	9,140	N.A.		7.8	244.8
1989	N.A.			217.5	362.8	N.A.	362.8	580.3	4,226	4,290	8,516	9,096	N.A.		6.0	220.8
1990[1]	N.A.			206.2	299.1	N.A.	299.1	505.3	4,194	3,991	8,185	8,690	N.A.		4.4	260.1

[1] Preliminary. *Source: Textile Organon* T.543

RAYON AND OTHER SYNTHETIC FIBERS

U.S. Rayon and Acetate Distribution In Millions of Pounds

	Yarn & Monofilaments								Staple & Tow & Fiber Fill						
	Producers' Shipments								Producers' Shipments						
	To Domestic Consumers								Domestic Consumers						
Year	Industrial	Textile	Acetate	Total	Export	Total	Import	Domestic Consump.	Rayon	Acetate	Total	Export	Total	Import	Domestic Consump.
1983	35.5		197.6	233.1	28.2	261.3	8.7	241.8	333.5	1.4	334.9	43.9	378.8	13.6	348.5
1984	38.2		180.1	218.3	18.2	236.5	10.0	228.3	331.9	.4	332.3	52.1	384.4	17.0	349.3
1985	N.A.			187.1	23.0	210.1	13.9	201.0	323.7	.5	324.2	35.0	359.2	12.3	336.5
1986	N.A.			192.1	20.2	212.3	17.0	209.1	373.0	.5	373.5	30.8	404.3	17.4	390.9
1987	N.A.			166.8	24.9	191.7	12.8	179.6	383.1	.5	383.6	32.4	416.0	13.8	397.4
1988	N.A.			182.6	34.1	216.7	17.6	200.2	386.0	N.A.	386.0	20.5	406.5	20.4	406.4
1989	N.A.			187.3	31.7	219.0	26.3	213.6	338.2	N.A.	338.2	16.2	354.4	54.0	392.2
1990[1]	N.A.			172.7	34.0	206.7	24.2	196.9	291.7	N.A.	291.7	12.5	304.2	111.6	403.3

[1] Preliminary. *Source: Textile Organon*

T.540

U.S. Domestic Distribution of Synthetic Fibers In Millions of Pounds

	Yarn & Monofilaments							Staple & Tow						
	Cellulosic			Non-Cellulosic					Non-Cellulosic					
Year	Rayon	Acetate	Total	Nylon	Olefin[2]	Polyester & Other	Total[3]	Rayon	Nylon	Acrylic & Mod-Acrylic	Olefin & Vinyon	Polyester	Total	Textile Glass Fiber
1983	35.5	197.6	233.1	1,392	698.6	1,294	3,385	333.5	897.1	492.2	183.4	2,099	3,672	1,184
1984	38.2	180.1	218.3	1,438	725.6	1,145	3,309	331.9	814.4	446.7	240.9	1,992	3,494	1,309
1985	N.A.		187.1	1,417	937.6	1,204	3,559	323.7	830.3	458.7	279.7	1,873	3,441	1,260
1986	N.A.		192.1	1,480	1,049	1,092	3,621	373.0	894.9	531.2	312.7	1,999	3,737	1,339
1987	N.A.		166.8	1,554	1,136	1,113	3,970	383.1	966.0	479.3	341.1	2,201	3,987	1,513
1988	N.A.		182.6	1,572	1,200	1,157	4,112	386.0	944.9	421.1	344.2	2,312	4,022	1,588
1989	N.A.		187.3	1,575	1,226	1,111	4,099	338.2	955.3	414.8	363.4	2,261	3,995	1,530
1990[1]	N.A.		172.7	1,538	1,405	1,046	4,161	291.7	950.2	352.2	387.9	2,015	3,706	1,518
1991														

[1] Preliminary. [2] Includes film fiber. [3] Includes Saran & Spandex. *Source: Textile Organon*

T.541

U.S. Mill Consumption of Fiber & Products & Per Capita Consumption

	Mill Consumption (Million Pounds)											Per Capita[4] Mill Consumption (Pounds)				
Year	Yarn & Monofilaments	Staple & Tow	Total R. & A.[2]	Noncellulosic Fiber	Textile Fiber Glass (Shipments)	Producers' Waste (Shipments)	Total Man-made[3]	Cotton	Wool	Silk	Grand Total	Man-made Fibers	Flax & Silk	Cotton	Wool	Total All Fibers
1983	241.8	348.5	590.3	7,396	1,184	223.5	7,995	2,796	162.5	1.6	10,954	34.9	—	15.9	1.2	47.5
1984	228.3	349.3	577.6	7,202	1,309	228.3	7,790	2,668	163.2	1.4	10,622	33.6	—	11.5	.6	45.7
1985	201.0	336.5	537.5	7,490	1,260	269.0	8,036	2,796	134.7	1.5	10,968	34.2	—	11.8	.5	46.6
1986	209.1	390.9	600.0	7,846	1,339	271.9	8,454	3,302	164.5	1.0	11,921	35.8	—	13.5	.6	49.9
1987	179.6	397.4	577.0	8,276	1,513	248.7	8,862	3,737	167.6	1.0	12,767	37.2	—	15.4	.6	53.2
1988	200.2	406.4	606.6	8,405	1,588	252.6	9,017	3,470	156.1	1.0	12,645	37.4	—	14.2	.5	52.2
1989	213.6	392.2	605.8	8,409	1,530	226.8	9,010	3,986	139.6	1.0	13,136	37.0	0.6	16.3	.5	54.5
1990[1]	196.9	403.3	600.2	8,238	1,518	264.5	8,837	4,037	135.4	1.0	13,010	36.0	0.6	16.3	.5	53.4
1991																

[1] Preliminary. [2] Rayon and acetate. [3] Man-made fiber data include only glass fiber for textile end uses. [4] Mill consumption adjusted for raw fiber equivalent of net U.S. trade in textile mfg. *Source: Textile Economics Bureau; Economic Research Service, U.S.D.A.*

T.542

Producer Price Index of Gray Synthetic Broadwovens (1982 = 100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	104.0	103.1	102.5	102.3	103.0	102.4	101.9	101.7	101.8	102.0	102.3	102.4	102.5
1986	102.4	102.5	102.5	103.0	102.4	102.6	102.7	101.5	100.3	101.0	100.9	101.0	101.9
1987	101.9	101.9	102.2	103.4	103.9	105.3	106.4	106.9	107.9	108.6	109.0	109.2	105.6
1988	110.0	111.1	111.6	111.8	112.2	113.0	113.4	113.8	113.0	113.5	113.9	114.6	112.7
1989	114.3	112.0	112.2	112.2	112.1	113.1	114.7	115.0	115.0	115.8	115.9	115.3	114.0
1990	115.6	115.7	115.6	115.7	115.5	115.6	115.7	115.2	115.3	115.6	115.8	116.1	115.7
1991[1]	115.7	114.7	114.4	114.1	114.3	113.8	114.7	117.0	116.4				
1992													

[1] Preliminary. *Source: Bureau of Labor Statistics. (0337-03)*

T.545

Rice

World production of rice declined during 1991/92, as harvested acreage and yields slipped with adverse weather in Asia, the world's rice bowl.

China is the largest producer, followed by India and Indonesia. The three nations accounted for about two-thirds of 1991/92 production, with China's crop (182 million tonnes) comprising more than half the total. Outside of Asia, Brazil is the largest producer. Though U.S. rice production is small relative to the world total, the U.S. exports more than a third of its crop, whereas other leading producers are their own best customers. Some Asian producers, notably Indonesia, have been net importers of rice.

The largest exporter is Thailand. The Mideast is the chief importing region, followed by Eastern Europe. Iran is generally the largest single importer. Iraq is often second, and it had been a major U.S. rice customer. The Gulf war cut Iraq's imports to perhaps 200,000 tonnes, versus over 500,000 annually in the late 1980s. When the trade sanctions on Iraq are lifted, its rice needs will likely surge.

Export prices were higher in 1991, owing to tight exportable supplies in the U.S. and Thailand. The 1990/91 Thai crop was small, because of adverse growing conditions. Thai milled rice averaged about $315 a tonne in mid-1991, versus $270 a year earlier; U.S. No. 2 milled rice in 1991 at about $370 a tonne compared with about $296 in 1990.

For the U.S., exports have historically been larger than domestic use. However, in recent years strong growth occurred in the domestic market, and higher prices cut into foreign demand for U.S. rice. In 1991/92, U.S. food use was due to be a record 67 million cwt., versus 64 million in 1990/91.

U.S. rice production reached a record 213 million cwt. in the mid-1980s and was 187.3 million in 1991/92. Arkansas was the leading producer, growing mostly long-grain rice, whereas California produces mostly medium grain. Louisiana cultivates about equal amounts of long and medium grain. For 1991/92, the Arkansas crop of 71 million cwt. was a record, while output in California and Louisiana dipped to about 25 million cwt. each.

The U.S. imports a small amount of rice, and Thailand and India are the primary suppliers. Latin America is now the chief U.S. rice market.

U.S. rough rice prices were expected to pivot around $7.00/cwt. in 1991/92, against $6.60-$6.80 in 1990/91. The USDA's statutory loan rate was $6.50/cwt. for the 1989 to 1991 crops.

Futures Market

Rough rice futures are traded on the Chicago Rice and Cotton Exchange.

World Rice[3] Supply & Distribution In Millions of Metric Tons

Year	Production			Exports			Imports			Utilization			Stocks (End)		
	U.S.	Non-U.S.	Total	U.S.	Non-U.S.	Total	EC-12	Iran	Total	U.S.	Non-U.S.	Total	U.S.	Non-U.S.	Total
1987	6.0	462.2	468.2	2.4	10.5	12.9	1.2	1.0	12.9	2.5	320.3	322.8	1.7	49.2	50.9
1988	5.9	458.0	463.9	2.2	9.7	11.9	1.2	.4	11.9	2.6	317.7	320.2	1.0	44.6	45.6
1989	7.3	481.8	489.0	3.0	12.1	15.1	1.3	1.0	15.1	2.6	326.0	328.7	.9	47.1	47.9
1990	7.0	501.7	508.7	2.4	9.6	12.0	1.2	.9	12.0	2.7	335.3	337.9	.9	53.7	54.6
1991[1]	7.0	512.9	519.9	2.2	10.3	12.5	1.1	.8	12.5	3.0	345.1	348.0	.8	58.1	58.9
1992[2]	7.2	500.5	507.6	2.3	10.6	12.9	1.0	1.0	12.9	3.0	343.3	346.3	.8	55.7	56.5

[1] Preliminary. [2] Forecast. [3] Production is on rough basis; the rest are on milled basis. *Source: Foreign Agricultural Service, U.S.D.A.* T.547a

World Production of Rough Rice In Millions of Metric Tons

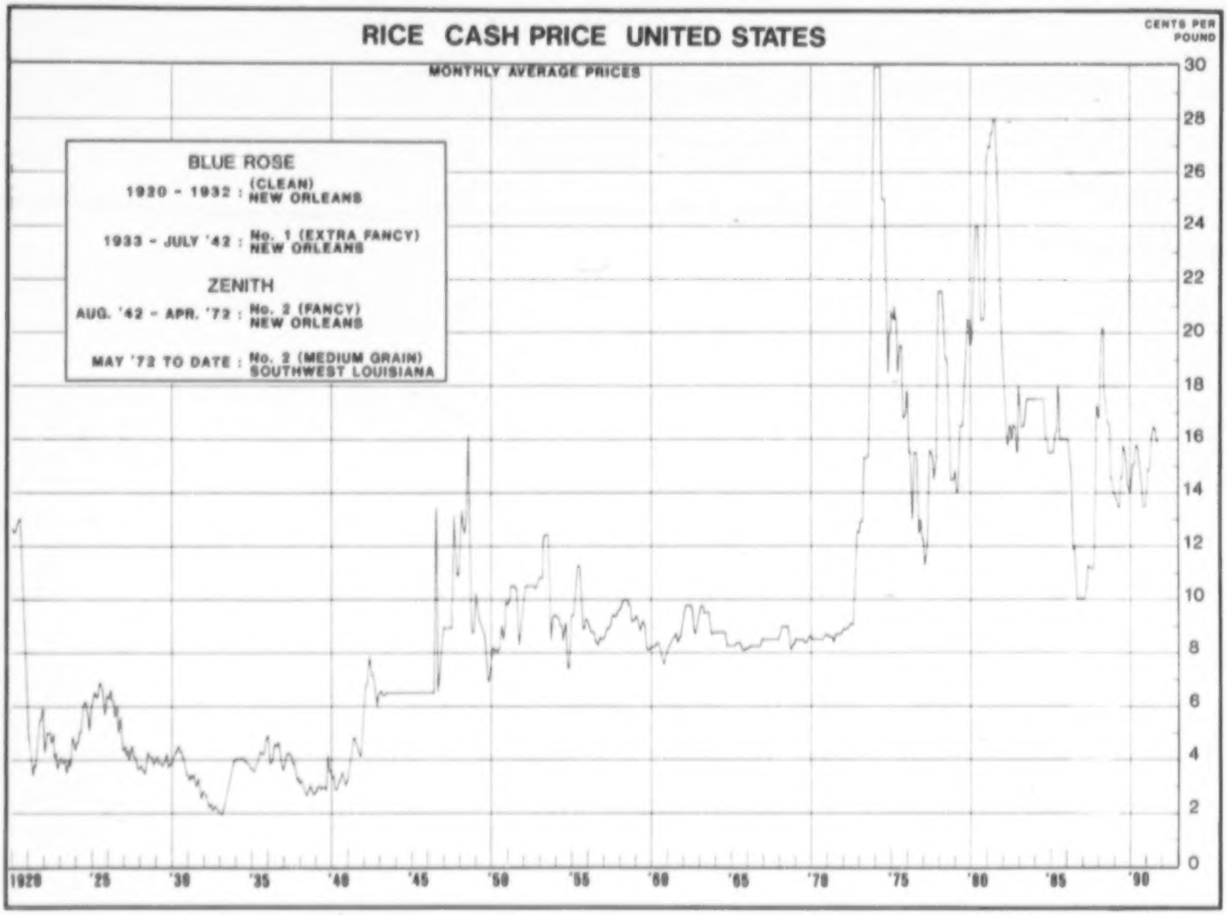
Crop Year	Brazil	Burma	China	Egypt	Vietnam	India	Japan	Indonesia	Rep. of Korea	Bangladesh	Philippines	Pakistan	Taiwan	Thailand	United States	World Total
1986–7	10.6	11.8	172.2	2.7	15.4	90.6	14.6	39.0	7.9	23.1	9.0	5.2	2.5	18.9	6.0	468.5
1987–8	11.8	11.4	173.9	2.3	15.3	85.3	13.3	41.5	7.6	23.1	8.5	4.9	2.4	18.0	5.9	463.9
1988–9	11.0	12.5	169.1	2.1	16.8	105.7	12.4	42.3	8.4	23.3	9.2	4.8	2.3	21.3	7.3	489.0
1989–90	7.2	13.5	180.1	2.5	18.0	111.1	12.9	44.7	8.1	26.8	8.9	4.8	2.4	20.2	7.0	508.7
1990–1[1]	9.3	13.7	189.3	—	17.5	111.9	13.1	45.2	7.7	26.9	9.6	4.9	—	17.3	7.0	519.9
1991–2[2]	10.0	12.6	182.0	—	—	107.3	12.9	44.4	7.8	27.6	—	5.0	—	20.0	7.2	507.6

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.547

World Exports of Rice (Milled Basis), by Country of Origin In Thousands of Metric Tons

Year	Australia	Argentina	Guyana	Burma	P.R. China	Egypt (U.A.R.)	Uruguay	Pakistan	EC-12	Indonesia	India	Taiwan	Thailand	United States	Vietnam	World Total
1987	338	150	69	493	1,020	105	190	1,226	981	100	350	240	4,355	2,444	153	12,928
1988	417	160	56	368	698	108	244	950	920	0	200	104	4,791	2,247	97	11,930
1989	450	130	26	456	320	100	251	779	963	104	450	68	6,037	2,973	1,400	15,101
1990[1]	470	70	30	186	300	32	250	904	969	50	420	50	3,927	2,424	1,500	12,044
1991[2]	470	75	30	300	550	25	250	1,200	1,040	0	500	200	4,200	2,200	1,000	12,491
1992[3]	500	60	20	500	500	125	350	1,200	1,160	0	400	100	4,500	2,300	800	12,919

[1] Preliminary. [2] Estimate. [3] Projected. *Source: Foreign Agricultural Service, U.S.D.A.* T.552



Average Wholesale Price of Rice No. 2 (Medium)[1] Southwest Louisiana Dollars per Cwt. Bagged

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
1980–1	20.5	20.8	21.6	24.4	26.4	27.0	27.1	27.5	27.6	28.0	28.0	27.8	25.6
1981–2	26.4	24.2	22.9	21.2	20.0	18.8	17.8	16.1	16.0	16.4	16.2	16.0	19.3
1982–3	16.5	16.5	16.5	16.7	17.8	17.3	16.5	16.5	16.5	17.1	17.5	17.5	16.9
1983–4	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
1984–5	16.0	16.0	15.5	15.5	15.5	15.5	15.5	16.0	16.2	16.3	18.0	16.2	16.0
1985–6	16.0	16.0	16.0	16.0	16.0	16.0	15.67	15.5	14.60	11.90	12.0	11.35	14.75
1986–7	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.50	11.25	11.15	11.20	11.20	10.45
1987–8	11.10	11.95	16.60	17.25	16.75	18.50	19.80	20.15	20.00	18.00	17.40	16.70	17.00
1988–9	16.40	16.20	14.50	14.50	14.00	13.90	13.75	13.50	13.50	14.60	14.65	15.75	14.60
1989–90	15.55	15.30	14.80	14.30	14.04	14.80	15.13	15.13	15.50	15.75	15.65	15.30	15.10
1990–1	14.75	13.90	13.50	13.50	13.50	14.90	14.90	15.05	16.05	16.15	16.50	16.35	14.92
1991–2[2]	15.85	16.00											

[1] U.S. No. 2—Broken not to exceed 4%. [2] Preliminary. *Source: Bureau of Labor Statistics* (0213–0101) T.549

U.S. Rice (Rough) Production by Type and Variety In Thousands of Cwt.

Year	Long Grain	Medium Grain	Short Grain	Total	Year	Long Grain	Medium Grain	Short Grain	Total
1986	96,773	32,239	4,344	133,356	1989	109,161	41,441	3,885	154,487
1987	88,995	37,651	2,957	129,603	1990	108,220	44,920	1,779	154,919
1988	119,364	36,891	3,642	159,897	1991[1]	112,434	44,486	798	157,718

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.548

Salient Statistics of Rice, Rough & Milled (Rough Equivalent) in the United States In Millions of Cwt.

Year Beginning August	Supply: Stocks Aug. 1	Supply: Production	Supply: Imports[2]	Supply: Total Supply	Disappearance: Domestic: Food[3]	Disappearance: Domestic: Brewers	Disappearance: Domestic: Seed	Disappearance: Domestic: Total	Disappearance: Exports	Residual	Total Disappearance	Government Support Program: Owned By CCC July 31	Government Support Program: Put Under Price Support	Loan Rate ($ CWT.): Rough: Long	Loan Rate ($ CWT.): Rough: Med & Short	Loan Rate ($ CWT.): Milled Long	Loan Rate ($ CWT.): All Classes
1986–7	77.3	133.4	2.6	213.3	53.1	15.0	2.6	70.7	84.2	7.0	161.9	8.7	132.3	7.52	6.40	12.44	7.20
1987–8	51.4	129.6	3.0	184.0	55.3	15.4	3.2	73.9	72.2	6.5	152.6	.1	125.7	7.03	6.47	11.36	6.84
1988–9	31.4	159.9	3.8	195.1	57.7	15.6	3.4	76.5	85.9	6.0	168.4	0	147.6	6.75	6.16	10.89	6.63
1989–90	26.7	154.5	4.4	185.6	60.1	15.4	3.6	79.1	77.2	3.0	159.3	0	121.1	6.68	6.06	10.81	6.50
1990–1[1]	26.3	154.9	4.8	186.0	63.9	15.0	3.6	82.5	70.9	8.0	161.4	0		6.68	6.17	10.84	6.50
1991–2[4]	24.6	157.7	5.0	187.3	67.0	15.5	3.8	86.3	70.0	6.5	162.8			6.65	6.09	10.74	6.50

[1] Preliminary. [2] Consists mostly of broken rice. [3] Includes shipments to territories and military food use. [4] Projected. *Source: Economic Research Service, U.S.D.A.* T.551

Acreage, Yield, Production, and Prices of Rice in the United States

Crop Year	Acreage Harvested (1,000 Acres): Southern States	Acreage Harvested (1,000 Acres): California	Acreage Harvested (1,000 Acres): United States	Yield Per Harvested Acre (In Lbs.): California	Yield Per Harvested Acre (In Lbs.): United States	Production 1,000 Cwt.: Southern States	Production 1,000 Cwt.: California	Production 1,000 Cwt.: United States	Value of Production $1,000	Wholesale Prices ($ Per Cwt.): Arkansas[2]	Wholesale Prices ($ Per Cwt.): Houston[3]	$ Per Tonne Milled Rice Average C.I.F. At Rotterdam: U.S. No. 2[4]	$ Per Tonne Milled Rice Average C.I.F. At Rotterdam: Thai "A"[5]	$ Per Tonne Milled Rice Average C.I.F. At Rotterdam: Thai "B"[5]
1986–7	2,000	360	2,360	7,700	5,651	105,629	27,727	133,356	495,505	12.20	11.60	260	279	232
1987–8	1,963	370	2,333	7,550	5,555	101,668	27,935	129,603	917,167	17.80	19.85	408	359	318
1988–9	2,475	425	2,900	7,020	5,514	130,252	29,645	159,897	1,068,965	15.45	15.55	312	382	337
1989–90	2,277	410	2,687	7,900	5,749	122,097	32,390	154,487	1,055,889	15.75	16.20	338	397	336
1990–1	2,423	385	2,813	7,700	5,629	128,429	29,645	158,074	1,149,000	15.55	15.55	340	405	339
1991–2[1]	2,418	315	2,831	7,800	5,571	128,346	29,260	157,718	1,056,711					

[1] Preliminary. [2] F.O.B. mills, Arkansas, medium. [3] Houston, Texas (long grain). [4] Milled, 4%, Bagged. [5] SWR 100% Bagged. *Source: Economic Research Service, U.S.D.A.* T.550

U.S. Exports of Milled Rice[1] by Country of Destination In Thousands of Metric Tons

Year Beg. Aug.	Bangladesh	Belg.-Lux.	Canada	Haiti	Indonesia	Iraq	Jamaica	Liberia	Netherlands	Saudi Arabia	Senegal	South Africa	Switzerland	United Kingd.	W. Germany	Total Exports
1984–5	80.3	133.1	97.6	3.8	3.0	380.4	53.3	52.5	30.2	240.8	59.1	83.6	55.4	9.4	17.1	1,961
1985–6	0	94.4	82.9	11.5	2.0	455.8	36.8	81.1	18.7	174.3	91.6	61.4	41.3	15.4	13.0	1,881
1986–7	89.7	116.2	63.6	80.3	.4	527.4	55.8	76.3	91.5	214.8	24.9	88.9	68.6	28.0	35.7	2,719
1987–8	85.3	112.8	82.6	60.6	3.6	433.2	51.2	72.5	55.7	220.0	120.1	93.9	74.1	16.9	21.1	2,291
1988–9[2]	0	131.9	89.2	80.6	61.2	521.4	70.6	77.0	72.1	182.4	98.9	87.2	95.5	26.6	41.4	2,790

[1] No adjustment of brown & parboiled rice has been made; treated as milled rice. [2] Preliminary. *Source: Bureau of the Census, Dept. of Commerce* T.553

US. Rice Exports by Export Program In Thousands of Metric Tons

Fiscal year	PL 480	Section 416	CCC Credit Programs[1]	CCC African relief exports	EEP[2]	Export programs	Exports Outside Specified Export Programs	Total U.S. Rice Exports	% Export Programs as a share of total exports
1985	577	0	359	180[3]	0	1,116[3]	856[3]	1,9072	56[3]
1986	313	0	477	0	23	813	1,569	2,382	34
1987	426	60	636	0	28	1,150	1,304	2,454	47
1988	321	29	443	0	120	913	1,220	2,173	42
1989	408	0	826	0	20	1,254	1,787	3,041	41
1990[4]	374	0	663	0	0	1,037	1,464	2,501	41

[1] Quantities and values shown are based on reports supplied by the export trade and may not completely reflect exports made under these programs. [2] USDA/Foreign Agricultural Service. [3] Estimated. [4] Preliminary. *Source: Agricultural Stabilization and Conservation Service, and Foreign Agricultural Service, USDA.*

Average Price Received by Farmers for Rice (Rough) in the U.S. In Dollars Per 100 Pounds (Cwt.)

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average[1]
1986–7	4.02	3.86	3.83	3.90	3.74	3.55	3.84	3.62	3.63	3.71	3.62	3.49	3.75
1987–8	3.82	4.34	6.25	7.53	7.64	7.93	9.37	9.22	8.92	7.97	7.69	7.94	7.27
1988–9	7.49	6.97	6.85	6.81	6.68	6.58	6.67	6.60	6.74	6.78	7.05	7.45	6.83
1989–90	7.41	7.59	7.41	7.03	7.05	7.44	7.57	7.55	7.41	7.28	7.18	7.05	7.35
1990–1[2]	6.66	6.21	5.95	6.21	6.12	6.38	6.69	7.07	7.43	7.45	7.43	7.18	6.73
1991–2[2]	7.16	7.67	7.61	7.78	7.92	7.70							

[1] Weighted average by sales. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.555

Rubber

Rubber prices weakened during 1991, mostly because of a drop in demand from the industrialized nations, where slack economic growth curtailed car sales and tire demand. Tires are the single largest use for natural and synthetic rubber. New supplies of rubber increased during the year, resulting in net additions to world stocks.

Natural rubber prices in early 1991 averaged about 49 cents per pound, versus a late-1990 average of around 46.5 cents, as the Gulf war stimulated demand from the military and optimism prevailed for a resurgence in economic growth during 1991. However, the latter failed to materialize, and rubber prices fell. By late 1991, natural rubber prices averaged about 44.5 cents/lb., basis smoked sheets in New York. Prices were likely to remain under pressure through first-half 1992.

The International Natural Rubber Organization (INRO) attempts to stabilize prices via a buffer stock arrangement, in which stock additions are made when prices are low and the opposite when prices are high. INRO's effect on prices during 1991 was minimal. Since 1989, INRO has purchased about 100,000 tonnes of rubber and sold none; the current pact expires in late 1993. INRO's buffer stock purchases at times depend on whether it has funds available.

There were some notable changes in the overall rubber supply situation in the early-1990s. Malaysia, once the largest natural rubber producer, dropped to the third spot, while India, once a net importer of rubber, was near self-sufficiency and within a few years was likely to be a net exporter. China, which typically acquired much of its natural rubber from Malaysia, shifted to Indonesia as a supplier.

On the synthetic side, output in the USSR, the world's largest producer during much of the 1980s, was likely to drop for some time, owing to a deteriorating economy. Accordingly, the U.S. was expected to take over as the major synthetic producer.

Total world rubber production since the late 1980s has averaged near 10 million tonnes and is about evenly divided between natural and synthetic. Natural rubber production totaled almost 5 million tonnes in 1990, increased slightly in 1991, and was expected to rise to about 5.56 million tonnes in 1992. Significantly, Thailand's production is growing rapidly, with 1992's crop expected to be 1.4 million tonnes, up 4.5 percent from 1991. Indonesia's 1992 crop was projected at 1.346 million tonnes, up 3 percent. Malaysia's estimated output of 1.25 million tonnes was 4 percent higher than in 1991, but down from 1990.

Through most of Asia's rubber-producing areas, plantations are relatively small, and when prices are not attractive, producers have difficulty affording enough workers to tap the trees. This is a reason why Malaysia's output has been falling. However, Malaysia has embarked on a broad program to increase area planted to rubber trees, not for the latex, but for the wood for making furniture. By the mid-1990s, it was expected that either Thailand or Indonesia would be the major natural rubber producer. By the year 2000, natural rubber output worldwide was expected to reach about 8 million tonnes.

World consumption of natural rubber in 1991 totaled 5.16 million tonnes and forecasts for 1992 pointed to a 4 percent increase, reflecting expectations for a stronger U.S. economy and improved automotive demand. Domestic natural rubber consumption was forecast to rise to 831,000 tonnes from 772,000 tonnes in 1991.

U.S. synthetic rubber production averaged about 2.3 million tonnes in recent years, slightly under the USSR's total. Japan is generally the third-largest synthetic producer, followed by Germany. Europe's combined synthetic output makes the area a major producer.

Synthetic rubber output is dependent on crude oil; it takes about eight gallons of oil with some natural rubber to make one car tire. Natural rubber is used in the tire walls for strength. Tire demand from industrialized nations is the major determinant of rubber prices.

Futures Markets

Rubber futures are traded in Kuala Lumpur, Tokyo, Singapore and London.

U.S. Imports of Natural Rubber (Includes Latex & Guayule) In Thousands of Metric Tons[3]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total[1]
1982	50.99	59.33	45.71	53.86	56.19	63.39	38.67	54.35	40.60	54.36	51.37	49.45	618.3
1983	33.01	49.63	48.54	62.11	63.44	65.20	50.41	31.90	44.22	67.83	71.06	54.71	642.1
1984	87.84	57.82	75.45	69.18	70.25	41.45	73.81	56.23	67.46	61.95	62.36	62.21	786.0
1985[3]	72.8	72.8	89.5	65.0	86.0	48.9	60.9	46.0	41.4	70.6	73.0	65.5	792.3
1986	66.7	71.5	77.9	84.5	48.4	54.9	70.1	45.2	63.9	73.5	54.0	56.7	765.0
1987	55.9	91.3	82.0	33.3	64.6	58.9	64.2	47.6	59.4	57.7	63.9	78.9	757.6
1988	83.2	69.6	87.0	68.6	67.2	64.9	49.5	83.3	59.1	69.3	77.4	74.7	853.8
1989	99.3	52.2	99.1	74.6	87.5	63.8	77.9	65.6	69.1	69.5	78.9	69.1	887.6
1990[2]	72.3	58.6	81.9	63.1	89.5	77.7	60.4	61.0	83.0	55.7	81.7	75.7	860.3
1991[2]	59.9	54.1	69.5	90.9	59.6	56.7	53.5	52.4	65.5				

[1] Includes latex and guayule. [2] Preliminary. [3] Data prior to 1985 are in thousands of long tons. *Source: Department of Commerce* T.560

World Rubber Production[1] In Thousands of Metric Tons

	Natural										Synthetic						
Year	Sri Lanka	India	Indonesia	Malaysia	Philippines	Thailand	Liberia	Brazil	China	World Total	Canada	Germany	Japan	United States	United Kingdom	USSR	World Total
1982	126.2	165.9	880.0	1,494	74.2	552.2	68.0	32.8	152.6	3,750	181.7	383.8	930.7	1,817	207.6	1,950	7,825
1983	140.0	168.0	997.2	1,564	71.8	587.2	76.5	35.2	172.4	4,030	182.0	418.0	1,003	1,987	219.5	1,970	8,275
1984	141.9	183.9	1,116	1,531	80.8	628.6	86.4	36.0	188.8	4,255	217.8	437.6	1,161	2,219	237.2	2,085	9,040
1985	137.5	198.3	1,130	1,470	90.1	723.8	84.4	40.4	187.9	4,340	209.2	447.6	1,158	2,026	232.6	2,125	8,960
1986	137.8	219.0	1,049	1,539	87.2	780.2	88.7	32.6	209.7	4,450	187.1	452.5	1,150	2,119	249.2	2,320	9,260
1987	121.8	227.4	1,203	1,579	83.0	925.6	93.0	26.6	237.6	4,780	179.8	468.4	1,192	2,182	257.0	2,366	9,460
1988	122.4	254.8	1,235	1,662	85.0	978.9	108.4	32.9	239.8	5,040	197.0	492.8	1,299	2,335	312.8	2,435	10,160
1989	110.7	288.6	1,256	1,415	86.0	1,179	106.0	33.0	242.8	5,110	188.0	505.2	1,352	2,261	311.4	2,280	10,040
1990[2]	113.1	323.5	1,262	1,292		1,271	40.0	33.0	264.2	5,210	213.0	542.3	1,426	2,115	298.8	2,365	10,000
1991[3]										4,356							11,933

[1] Including rubber in the form of latex. [2] Preliminary. [3] Estimate. *Source: Rubber Study Group* T.556

World Consumption of Natural and Synthetic Rubber In Thousands of Metric Tons

	Natural									Synthetic						
Year	Australia	Brazil	Canada	France	Germany	Japan	United Kingdom	United States	World Total	Canada	France	Germany	Japan	United Kingdom	United States	World Total
1982	36.4	67.8	76.0	158.0	171.2	439.0	118.0	585.0	3,655	182.0	265.2	386.9	797.0	232.0	1,765	8,035
1983	30.9	70.2	87.0	163.0	179.5	504.0	120.0	665.0	3,990	195.0	276.6	395.8	851.0	185.0	1,883	8,300
1984	35.9	88.7	102.0	162.0	190.0	525.0	118.0	750.7	4,230	208.0	287.0	403.0	915.0	195.0	2,062	8,955
1985	35.8	97.6	95.0	156.0	202.2	539.9	126.0	764.0	4,350	173.0	311.8	411.3	947.5	201.0	1,962	9,000
1986	30.6	105.6	86.0	158.7	198.7	534.5	130.0	743.0	4,425	190.2	315.0	426.0	910.0	195.0	2,020	9,280
1987	35.4	115.4	98.0	170.0	198.5	570.2	134.0	789.0	4,810	210.0	316.4	453.4	946.0	216.0	2,017	9,610
1988	40.4	125.3	82.5	181.0	203.6	670.2	140.0	858.3	5,115	202.0	315.0	471.0	1,042	226.5	2,017	10,000
1989	43.4	124.2	84.9	184.0	221.1	656.6	132.5	866.9	5,225	191.1	358.0	476.0	1,103	240.0	2,051	10,060
1990[1]	34.1	114.0	84.0	179.0	208.7	663.0	136.0	807.5	4,056	185.4	351.0	511.0	1,133	251.0	1,821	9,860
1991[2]									4,267							7,756

[1] Preliminary. [2] Estimate. *Source: Rubber Study Group* T.557

World Stocks[1] of Natural Rubber (by Countries) & Synthetic on Jan. 1 In Thousands of Metric Tons

		In Producing Countries							In Consuming Countries (Commercial Stocks)									
Year	Total Synthetic	Brazil	Sri Lanka	Indonesia	Malaysia (Peninsular)	Singapore	Thailand	Total	Australia	Canada	China	France	Germany	India	Japan	United Kingdom	United States	Total
1982	1,890	19.6	33.7	75.0	286.3	43.8	60.0	535	2.7	9.9	140.0	16.8	14.5	45.9	116.9	20.0	131.9	835
1983	1,730	18.5	11.3	75.0	266.0	26.9	36.6	570	4.2	6.9	137.5	9.5	14.5	60.6	90.8	17.8	95.4	860
1984	1,705	15.3	9.6	75.0	254.9	32.2	39.6	545	1.8	7.4	185.0	9.0	14.5	47.4	81.0	16.8	80.8	875
1985	1,790	15.9	10.2	95.0	228.8	36.8	41.3	545	2.8	8.5	187.5	4.0	15.0	58.0	70.7	15.8	96.4	925
1986	1,780	13.5	12.2	90.0	191.8	22.0	47.1	520	2.6	9.0	122.5	4.0	15.0	58.2	70.7	10.0	95.2	900
1987	1,805	13.3	23.6	90.0	207.3	21.6	32.5	540	2.6	12.0	105.0	6.0	15.0	85.5	61.9	10.5	73.0	875
1988	1,775	10.5	20.0	100.0	208.5	21.6	37.8	520	2.5	12.5	147.5	11.0	15.0	77.6	63.6	10.5	72.5	830
1989	1,700	13.8	23.2	100.0	286.5	32.2	53.0	550	2.4	13.0	150.0	9.5	14.5	80.9	97.2	12.0	61.7	730
1990[2]	1,585	5.4	26.9	110.0	248.3	24.0	53.7	520	2.3	13.0	150.0	8.0	14.5	78.4	105.6	12.0	92.0	695
1991[3]	1,295	6.2	28.6	102.5	184.0	25.0	66.5	480						70.9	112.6		95.3	590

[1] Exclusive of "Stock Afloat" and unreported gov't. stockpiles. [2] Preliminary. [3] Estimate. *Source: Rubber Study Group* (London) T.558

Net Exports of Natural Rubber from Producing Areas In Thousands of Metric Tons

Year	Burma	Kampuchea	Sri Lanka (Ceylon)	Indonesia	Malaysia (Peninsular)	Sabah	Sarawak	Thailand	Vietnam	Other Asia	Liberia	Nigeria	Other Africa	Papua New Guinea	World Total
1982		7.5	131.3	801.4	1,317	21.7	15.9	546.7	32.3	24.2	60.1	26.8	57.8	2.3	3,065
1983		10.0	125.2	938.0	1,498	21.5	18.9	552.5	35.8	19.0	73.6	28.8	62.0	2.7	3,370
1984		12.0	126.2	1,010	1,486	25.2	18.0	595.2	35.0	19.0	87.9	28.8	65.5	3.0	3,520
1985		14.0	120.4	1,001	1,466	22.0	17.4	685.3	35.5	29.8	87.2	29.1	69.0	5.1	3,640
1986		20.0	110.0	958.7	1,485	24.6	16.3	755.2	35.0	35.2	90.4	26.0	78.0	4.9	3,620
1987		20.0	106.0	1,093	1,579	29.5	19.9	873.2	40.0	28.1	91.1	43.7	94.0	3.8	3,950
1988		21.0	99.3	1,132	1,564	35.8	28.3	906.4	43.0	37.0	105.6	65.8	110.0	4.5	4,100
1989[1]		54.5	86.0	1,152	1,365	36.0	23.6	1,101	46.5	35.6	87.0	101.3	115.0	4.1	4,180
1990[2]			86.7	1,077	1,186			1,151	36.0	37.8	73.0	121.0	113.0		4,030

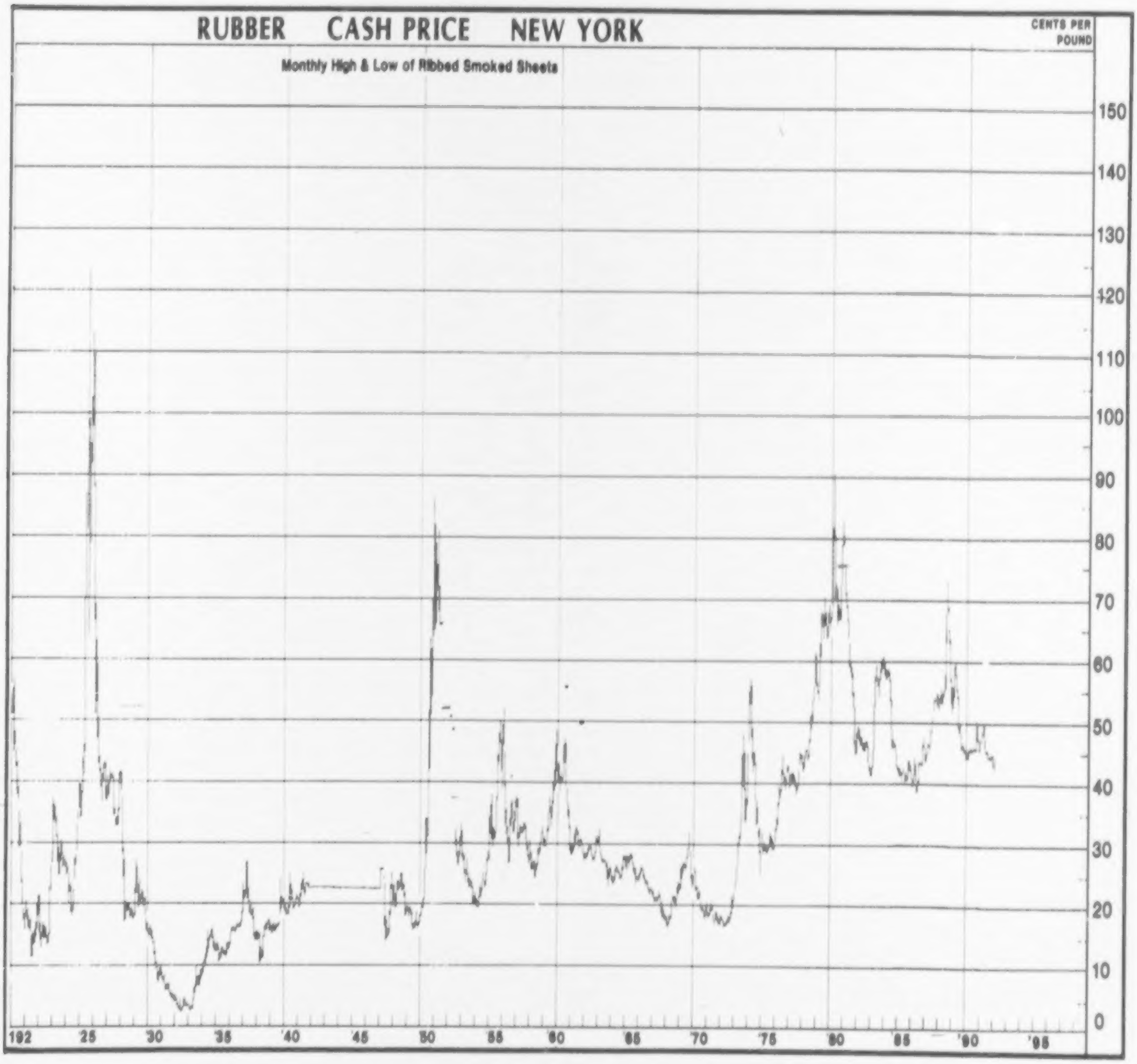
[1] Preliminary. [2] Estimate. *Source: Rubber Study Group* (London) T.559

RUBBER

Average Spot Crude Rubber Prices (Smoked Sheets[1]) in New York In Cents Per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1981	71.3	69.0	65.0	59.0	58.0	57.0	56.0	54.0	50.4	—	45.6	48.3	57.6
1982	48.8	46.5	47.0	45.3	45.3	46.1	46.5	46.8	44.5	42.6	42.1	41.8	45.3
1983	44.0	48.5	57.8	57.8	56.8	54.5	58.3	59.3	60.5	60.5	58.3	—	56.0
1984	57.3	58.3	58.0	56.8	51.8	47.0	46.0	46.0	46.0	43.0	42.8	42.0	49.6
1985	42.3	42.3	41.8	42.3	40.8	42.0	40.3	41.8	41.8	43.8	42.5	39.8	41.8
1986	40.7	42.8	42.0	39.2	40.1	41.0	43.5	43.5	45.3	46.9	44.7	44.7	42.9
1987	45.9	46.5	43.8	47.4	49.1	50.6	53.5	53.7	54.2	53.8	53.1	54.0	50.5
1988	54.6	53.8	54.9	55.7	58.6	67.6	66.1	63.8	60.1	55.2	53.0	54.1	58.1
1989	56.0	59.3	54.1	55.2	52.1	49.5	49.2	47.2	46.1	46.1	45.6	44.8	50.4
1990	44.7	45.8	45.9	45.6	45.8	46.0	45.8	47.5	48.4	46.5	46.3	47.1	46.3
1991	47.5	48.9	49.2	45.9	45.2	45.2	44.6	44.6	44.3	44.5	44.8	44.1	45.7
1992	43.1												

[1] No. 1, ribbed, plantation rubber. *Source: Wall St. Journal; CRB.* *T.561*



Consumption of Natural Rubber in the United States In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1980	63.0	57.3	55.7	46.9	42.3	41.3	38.8	43.2	49.4	49.5	50.3	48.7	586.15
1981	49.0	52.6	55.4	55.1	53.9	59.5	56.4	51.1	52.1	57.3	49.7	42.6	634.67
1982	55.3	59.9	50.2	57.8	63.3	68.9	32.7	65.6	48.8	53.3	48.9	56.0	660.61
1983	64.5	44.5	55.3	55.3	56.9	67.0	48.8	39.2	50.2	75.3	69.7	49.6	676.27
1984	73.8	56.8	83.1	68.2	65.1	42.4	73.9	56.1	63.7	58.3	55.4	54.1	750.74
1985	71.8	65.7	91.5	51.7	89.0	45.2	55.4	47.3	68.1	47.2	65.7	52.4	774.68
1986	59.4	71.8	71.3	81.9	45.5	54.6	69.9	49.9	57.0	80.3	50.8	51.2	743.56
1987	49.9	85.4	81.3	62.3	62.6	56.3	67.4	61.4	61.9	57.4	60.6	69.4	775.82
1988	80.9	66.3	91.6	60.8	68.7	66.2	53.5	80.6	64.6	74.5	75.4	75.2	858.28
1989	89.9	51.1	96.6	68.4	87.9	65.1	82.7	70.8	72.0	62.1	84.6	50.9	866.87
1990[1]	62.6	57.3	79.0	65.2	87.4	73.9	57.4	74.1	78.8	59.8	75.6	69.8	839.03

[1] Preliminary. *Source: Rubber Manufacturers' Association* T.562

Stocks of Natural Rubber in the United States, Beginning of Month In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1980	132.1	131.4	135.3	141.4	152.4	145.7	147.4	149.9	138.5	132.9	129.5	123.1
1981	126.7	128.0	125.4	122.8	127.6	124.1	119.5	113.5	111.2	114.4	123.0	130.5
1982	142.4	127.1	126.5	121.3	116.6	110.8	105.4	110.2	97.7	89.0	90.2	95.4
1983	95.4	91.8	95.0	87.4	93.8	100.0	97.9	99.2	90.7	83.3	74.8	75.9
1984	80.8	95.2	95.7	87.7	87.8	91.4	88.5	87.0	84.8	86.2	87.3	91.3
1985	96.4	94.3	97.3	91.4	101.9	95.9	95.6	97.9	93.9	84.9	81.1	85.1
1986	95.2	97.0	96.9	100.4	98.6	98.6	96.7	93.8	86.4	91.6	75.3	78.2
1987	38.5	76.7	78.8	70.2	80.2	79.5	79.0	82.5	77.0	70.6	65.9	65.5
1988	72.5	74.9	75.3	70.7	74.6	72.9	71.6	68.7	71.2	63.9	57.9	58.4
1989	61.7	71.1	67.5	77.4	82.2	86.7	86.2	86.2	88.1	83.3	87.7	83.9
1990[1]	92.0	100.2	100.2	101.6	97.2	97.3	99.8	101.6	87.2	84.7	89.6	94.3

[1] Preliminary. *Source: Rubber Manufacturers' Association* T.563

Stocks of Synthetic Rubber in the United States, Beginning of Month In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1980	402.9	439.9	436.2	427.6	452.2	445.1	429.2	391.2	372.3	339.7	325.4	328.9
1981	341.8	364.5	354.6	347.0	365.9	368.3	359.8	369.4	353.4	351.9	352.6	364.4
1982	349.0	333.3	336.8	349.2	358.3	364.4	352.9	342.8	326.6	304.3	318.8	294.6
1983	269.7	281.0	284.8	283.5	283.8	294.3	290.8	304.8	269.8	256.2	250.7	276.9
1984	277.9	284.1	277.2	277.0	294.6	305.0	302.3	309.3	300.6	312.0	301.4	285.9
1985	272.1	281.2	271.8	288.6	294.0	398.0	247.8	295.8	413.5	397.3	374.9	367.0
1986	213.9	352.8	217.5	397.7	403.0	238.6	247.5	239.9	233.4	236.5	231.1	224.6
1987	235.6	247.0	249.5	242.6	239.9	242.2	241.8	251.9	240.6	222.8	213.6	213.8
1988	229.7	237.8	235.1	229.6	237.5	246.2	249.6	261.0	259.9	258.6	259.0	258.2
1989	276.6	288.9	287.7	294.4	289.6	300.4	303.7	308.7	314.1	323.4	329.6	414.8
1990[1]	404.0	393.5	392.5	385.8	406.8	397.5	395.0	414.9	420.8	405.0	393.9	403.7

[1] Preliminary. *Source: Department of Commerce* T.564

Production of Synthetic Rubber in the United States In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1980	195.6	194.7	206.8	192.4	159.6	129.6	110.3	123.7	149.8	174.6	178.5	193.7	2,015
1981	193.5	169.7	200.4	180.9	175.9	158.2	161.5	159.7	168.4	170.0	157.7	125.5	2,021
1982	155.6	162.3	187.9	171.7	171.1	156.8	139.7	145.5	147.9	154.4	122.4	116.5	1,829
1983	155.2	153.9	170.1	160.5	171.1	164.6	154.4	146.7	159.6	174.5	189.4	160.2	1,936
1984	183.3	173.0	190.3	193.2	191.4	183.7	166.7	178.4	173.0	179.7	158.3	147.5	2,156
1985	169.9	161.6	182.1	166.0	154.2	139.5	150.4	154.2	160.3	153.6	149.2	131.8	1,838
1986	166.5	156.7	189.1	178.6	167.8	164.9	155.3	170.5	178.6	186.7	145.6	174.7	2,013
1987	187.1	177.5	193.6	174.1	179.7	175.0	186.2	164.2	176.0	191.0	182.9	194.8	2,184
1988	187.0	179.1	201.2	193.7	205.4	197.4	187.4	200.4	189.6	193.2	201.9	188.8	2,335
1989	206.3	181.8	206.2	207.2	189.1	179.6	178.7	186.2	201.7	204.7	189.9	162.8	2,261
1990[1]	173.5	180.1	182.5	187.8	174.6	172.0	171.9	180.9	180.4	190.3	167.4	153.4	2,145

[1] Preliminary. *Source: Department of Commerce* T.565

RUBBER

Consumption of Synthetic Rubber in the United States In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	153.0	166.7	194.0	144.9	167.1	154.1	144.7	165.0	163.5	163.8	141.1	131.9	1,890
1982	153.3	140.7	154.3	145.3	148.5	154.5	135.8	150.5	158.1	131.0	136.8	136.1	1,757
1983	131.7	140.2	158.2	146.3	146.2	156.7	135.6	170.3	170.5	180.4	158.2	147.2	1,828
1984	177.5	175.4	180.5	166.7	167.1	171.0	147.1	173.9	151.5	184.1	166.3	147.2	2,062
1985	155.8	169.5	159.6	154.8	163.6	137.9	139.8	150.6	171.6	174.3	154.0	140.3	1,802
1986	160.7	145.0	175.7	157.6	163.9	148.0	151.5	168.5	160.6	177.5	145.8	155.7	1,895
1987	162.8	166.1	182.8	160.6	163.1	157.8	161.9	163.6	172.2	185.1	167.6	174.1	2,017
1988	158.5	166.8	186.8	163.1	172.1	166.3	160.9	171.1	162.5	170.6	180.5	150.5	2,017
1989[1]	191.7	173.0	189.4	194.7	170.7	165.4	167.9	170.5	169.0	179.0	182.2	151.1	2,051
1990[1]	159.6	158.3	160.0	140.6	160.9	149.4	136.7	148.1	155.3	175.3	147.0	119.1	1,810

[1] Preliminary. *Source: Department of Commerce*

T.566

Exports of Synthetic Rubber from the United States In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	31.21	31.65	38.73	31.77	32.00	28.55	26.27	21.97	24.40	23.94	22.49	21.65	334.63
1982	27.76	23.46	31.18	26.53	24.73	25.23	20.40	22.04	22.83	21.13	20.47	18.86	284.62
1983	20.24	18.61	24.44	24.91	31.66	24.37	20.15	21.08	22.01	20.14	23.75	23.67	275.03
1984	24.12	22.22	28.09	29.13	29.42	28.02	29.58	30.24	29.95	25.54	25.92	25.68	327.91
1985	24.24	23.04	29.34	26.65	30.87	27.69	22.57	25.35	28.04	25.74	22.48	25.85	311.85
1986	23.87	28.10	24.38	35.96	26.12	25.44	26.76	32.28	34.79	30.88	28.22	27.47	344.27
1987	32.42	33.21	36.06	37.06	39.41	36.92	34.10	33.27	38.84	33.46	37.53	37.11	429.40
1988	39.70	37.35	41.77	41.68	40.43	41.12	29.76	44.03	38.62	37.18	36.25	32.12	460.01
1989[1]	42.40	45.66	54.98	41.27	54.39	51.30	43.71	48.21	54.54	54.64	43.59	44.39	579.08

[1] Preliminary. *Source: Department of Commerce*

T.567

Production of Auto. Pneumatic Casings[2] & Truck & Bus Retail Sales[1] in the U.S. In Ths. of Casings

	Total Production of Tires													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Retail Sales[1]
1981	15,434	15,614	16,805	15,438	15,157	15,447	14,321	15,443	15,894	16,604	13,750	11,855	181,762	1,808
1982	14,866	15,387	17,051	15,077	14,856	15,669	12,293	14,835	15,528	15,381	13,585	13,972	178,500	2,152
1983	15,497	14,992	15,370	16,325	15,653	15,473	12,570	16,440	16,360	16,734	15,136	15,483	186,923	2,654
1984	16,749	17,498	19,122	16,988	18,043	18,557	15,546	18,078	17,333	19,136	16,645	15,682	209,375	3,485
1985	18,381	17,375	18,704	17,388	16,781	15,216	12,989	16,635	16,844	17,626	15,198	13,786	196,923	3,913
1986	16,306	15,966	16,968	16,037	15,003	14,647	14,203	16,112	16,540	18,180	15,144	15,183	190,289	3,947
1987	16,879	16,593	17,733	16,680	16,982	16,548	15,796	16,723	17,204	18,956	16,455	16,428	202,978	4,088
1988	17,345	18,027	19,305	17,642	17,403	17,941	15,022	18,058	18,115	19,138	17,253	16,102	211,351	4,121
1989	18,944	18,102	19,670	19,224	19,090	18,312	14,835	18,288	16,963	18,400	16,323	14,721	212,870	4,062
1990[3]	19,017	17,376	19,522	17,680	17,990	18,186	14,996	18,555	17,612	19,965	16,077	13,687	210,663	3,719
1991[3]	17,713	17,375	16,208	17,017	17,360	16,419	14,354	17,784	17,045					3,372

[1] Domestic & imports, in thousands. [2] Passenger cars, buses, trucks & motorcycle tires. [3] Preliminary.
Sources: Rubber Manufacturers' Association; Motor Vehicle Manufacturing Association

T.568

Stocks of Auto. Pneumatic Casings & Passenger[1] Car Retail Sales in the U.S. In Ths. of Casings

	Total Stocks of Tires												
Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Retail Sales[1]
1981	33,298	41,226	44,402	45,217	44,713	43,480	41,445	39,998	39,601	38,986	39,487	41,112	8,535
1982	40,863	42,904	46,254	47,817	46,583	45,337	43,475	40,763	40,192	38,685	38,116	38,436	7,980
1983	39,955	43,839	45,483	50,287	51,921	42,395	39,622	36,989	35,541	32,854	31,530	31,676	9,179
1984	33,340	35,450	37,615	38,529	38,026	37,693	37,678	36,365	37,199	37,685	37,277	37,995	10,394
1985	39,623	41,948	45,905	48,875	49,168	49,063	46,909	44,349	43,553	41,514	40,425	40,023	11,039
1986	39,823	40,717	43,499	45,359	44,519	44,741	40,009	38,036	36,836	34,890	34,130	33,681	11,450
1987	34,286	36,323	38,665	40,673	39,962	40,312	37,872	37,344	37,501	36,234	34,539	33,702	10,278
1988	34,338	37,047	39,904	40,737	41,149	40,159	37,976	37,355	36,064	34,771	34,074	33,434	10,639
1989	33,191	35,186	37,884	40,552	42,791	43,530	42,695	42,596	41,902	39,852	39,156	38,378	9,903
1990[2]	39,308	43,888	46,561	48,446	49,601	48,728	47,893	45,351	43,492	42,047	41,553	41,582	9,499
1991[2]	42,649	46,333	50,051	51,096	51,151	50,725	47,204	44,069	41,610	36,773			8,388

[1] Domestic & imports, in thousands. [2] Preliminary. *Sources: Rubber Manufacturers' Association; Motor Vehicle Mfg. Association*

T.569

Rye

U.S. production of rye declined in 1991 and was only 9.8 million bushels, down from 10.2 million in 1990 and the lowest in many years. Ouput has fallen sharply in the Dakotas and Minnesota over the last decade. In recent years, Georgia, South Dakota, and Nebraska have been the chief growing states.

To satisfy domestic needs, U.S. imports were projected to rise to 5.5 million bushels in 1991/92 from 3.9 million the season before.

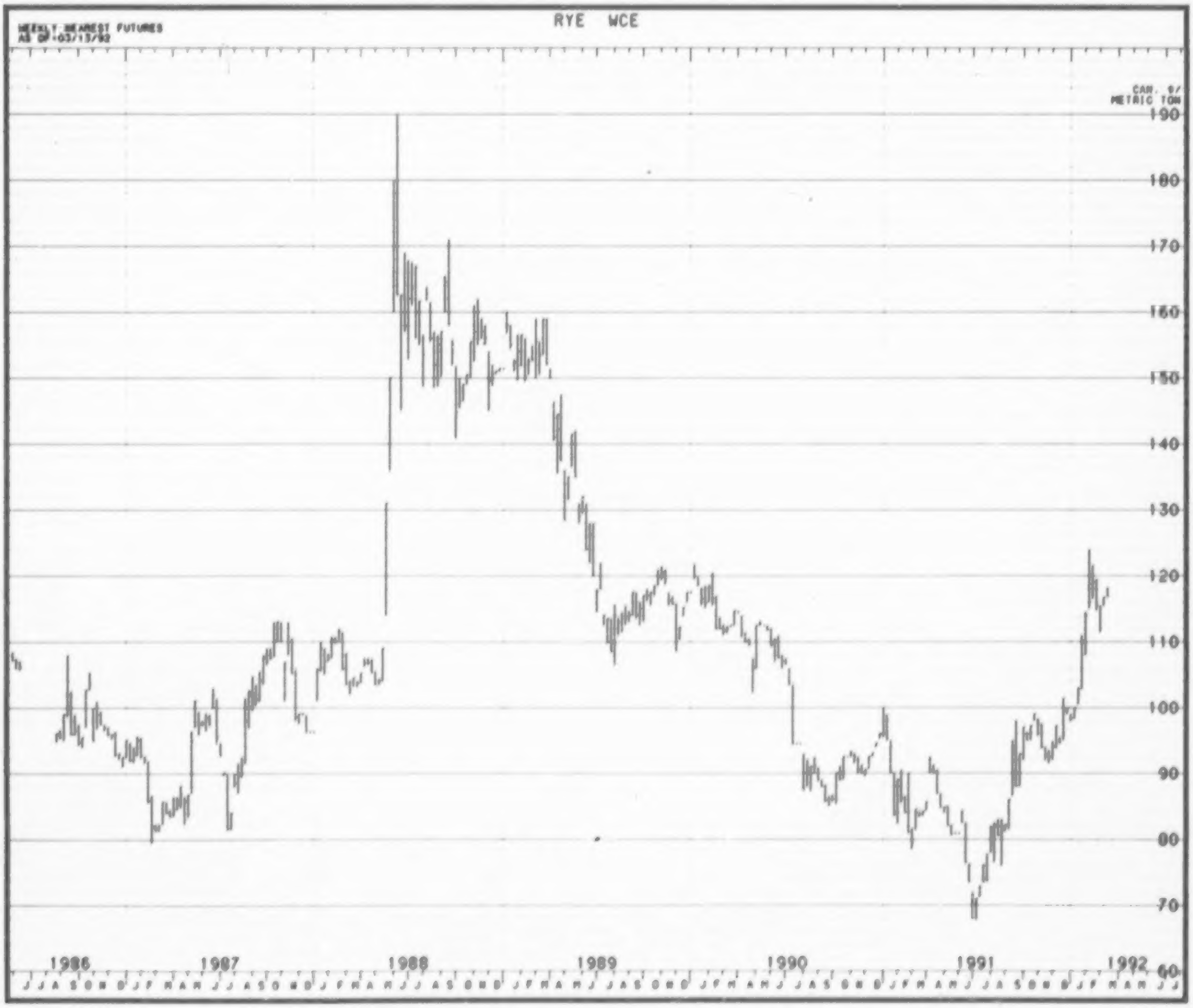
Domestic feeding of rye has fallen in recent years and was forecast to be 6.9 million bushels in 1991/92, versus 7.7 million the year before and the lowest in eleven years. Food use was expected to hold steady at around 3.5 million bushels. Rye is used as an animal feed and as an ingredient in bread, whiskey and gin.

The U.S. government maintains a support program for rye. The loan rate for farmers was $1.38 a bushel in 1991, versus $1.33 in 1990. The average price received by farmers was projected to be $2.10 a bushel in 1991/92, little changed from $2.09 the previous season.

On a worldwide basis, the former USSR is by far the largest rye producer, with an annual crop of 15-20 million tonnes. Poland, Germany, and China are also large producers.

Futures Market

Rye futures are traded on the Winnipeg Commodity Exchange (WCE).



World Production of Rye In Thousands of Metric Tons

Crop Year	Argentina	Austria	Canada	Czechoslovakia	Denmark	France	Germany West	Germany East	Hungary	Netherlands	Poland	Spain	Turkey	USSR	United States	World Total
1982–3	148	348	933	583	235	327	1,703	2,119	120	26	7,792	169	430	14,000	496	30,108
1983–4	130	348	827	751	315	278	1,646	2,092	138	26	8,781	253	380	14,000	689	31,407
1984–5	140	380	664	710	608	321	1,983	2,510	192	25	9,540	325	360	13,400	827	33,398
1985–6	100	339	569	620	565	283	1,877	2,505	163	19	7,600	295	360	15,700	524	32,217
1986–7	60	284	609	547	546	200	1,818	2,406	172	19	7,074	220	350	15,248	496	30,782
1987–8	88	309	493	496	513	275	1,645	2,283	186	25	6,816	320	350	18,055	503	33,034
1988–9	42	356	267	530	366	260	1,634	1,785	245	28	7,232	357	360	18,517	373	32,989
1989–90[1]	70	381	900	700	485	260	1,845	2,070	200	32	6,200	336	320	20,100	347	35,200
1990–1[2]			700	700	500		2,000	2,100	200		6,000			21,000	258	36,000
1991–2[2]			400	700	400		— 3,300 —		200		5,900			13,500	248	26,600

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.*

T.570

Salient Statistics of Rye in the United States

Year Begin. June 1	Supply				Disappearance							Acreage		Yield Per Harvested Acre
					Domestic Use									
	June 1 Total Stocks	Production	Imports	Total Supply	Food	Industry	Seed	Feed[5]	Total	Exports	Total Disappearance	Planted	Harvested for Grain	
	Thousands of Bushels											Mil.		Bushels
1982–3	3,012	19,533	3,043	25,500	3,315	2,256	4,300	9,600	19,500	194	19,700	2,533	677	28.8
1983–4	5,822	27,008	1,600	34,400	3,500	2,100	4,700	11,900	22,200	1,000	23,200	2,707	892	30.3
1984–5	11,300	32,407	600	33,000	3,500	2,000	4,100	3,200	12,800	400	13,200	2,971	979	33.1
1985–6	19,800	20,373	2,200	42,400	3,500	2,100	3,800	10,900	20,300	200	20,500	2,543	708	28.8
1986–7	21,900	19,067	1,000	41,900	3,500	2,000	3,700	13,700	22,900	500	23,400	2,334	661	28.8
1987–8	18,600	19,526	1,200	39,300	3,500	2,000	3,800	10,600	19,900	500	20,400	2,428	671	29.1
1988–9	18,900	14,689	200	33,800	3,500	2,000	3,200	11,400	20,100	3,400	23,500	2,374	595	24.7
1989–90	10,300	13,647	0	24,000	3,500	2,000	3,000	9,000	17,500	800	18,300	2,014	484	28.2
1990–1[1]	5,600	10,098	390	19,600	3,500	2,000	3,000	7,600	16,100	200	16,300	1,625	373	27.1
1991–2[4]	3,300	12,000	280	18,100	3,500	2,000	3,000	6,300	14,800	300	15,100	1,686	434	27.6

[1] Preliminary. [2] Includes total loans. [3] Uncommitted, gov't only. [4] Forecast. [5] Includes residual; approximates total feed use.
Source: Economics Research Service, U.S.D.A.

T.571

Production of Rye in the United States In Thousands of Bushels

Year	Illinois	Indiana	Kansas	Michigan	Minnesota	Georgia	Nebraska	No. Dakota	Ohio	Oklahoma	Pennsylvania	So. Dakota	Virginia	Texas	Wisconsin	So. Carolina
1983	336	270	220	600	4,960	1,470	1,265	4,320	210	780	578	8,740	312	450	300	320
1984	308	336	312	588	6,650	1,760	1,392	5,400	175	704	578	10,800	378	240	216	546
1985	256	308	300	651	3,300	2,070	1,242	2,640	172	828	740	4,440	312	400	234	532
1986	210	280	210	713	1,600	1,785	1,035	4,250	175	840	630	4,440	364	190	168	391
1987	144	162	270	640	1,200	1,540	1,150	5,115	180	360	525	5,040	435	150	100	528
1988	140	210	130	650	920	1,890	1,375	1,350	185	720	684	2,250	560	150	120	720
1989	312	204	80	825	1,088	1,610	600	1,064	155	532	576	3,240	264	126	360	644
1990	165	124	130	580	868	1,320	750	780	175	420	496	1,870	256	140	465	594
1991[1]	162	100	115	360	648	1,300	1,000	992	155	665	297	1,152	264	228	435	630

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.*

T.572

Average[1] Open Interest of Rye Futures in Winnipeg In 20 Tonne Units

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	3,227	3,628	3,097	4,625	4,834	4,935	7,883	7,915	3,665	4,494	3,110	3,054
1984	2,224	4,566	3,980	3,883	3,731	3,023	2,888	5,430	7,098	6,320	5,894	4,158
1985	4,267	4,826	4,175	4,227	3,893	3,919	4,031	5,022	4,872	5,478	4,289	3,786
1986[1]	4,287	4,335	3,302	4,211	3,039	2,553	2,900	3,317	3,479	2,767	2,827	2,031
1987	2,128	2,406	1,892	2,813	3,778	4,427	2,866	3,167	4,209	3,228	3,211	2,494
1988	2,690	2,645	2,760	2,809	2,176	3,635	3,562	3,628	3,537	3,139	2,827	2,160
1989	2,382	2,556	1,768	1,586	1,666	1,963	1,990	3,027	3,004	2,954	3,484	2,537
1990	2,828	2,840	1,943	2,335	2,500	2,408	2,673	3,062	2,669	2,379	2,116	1,625
1991	1,713	1,824	1,765	1,686	1,165	1,078	1,017	1,447	1,724	1,850	1,630	1,168
1992												

[1] Data Prior to Avg. 1986 are for the end of Month. *Source: Winnipeg Commodity Exchange*

T.577

U.S. Rye Crop Production Reports and CCC Operations In Thousands of Bushels

Year Begin. June 1	Official Crop Reports July 1	Aug. 1	Dec. 1	Final	National Average - Support Rate - $ Per Bushel	% of Parity	Placed Under Loan Total	% of Production	Acquired by CCC	Total Stocks Ending June 30 Ending Carryover[1]	CCC Owned
1979–0	23,638	23,736	24,549	21,887	1.79	51	1,900	8.5	—	8,973	—
1980–1	15,784	16,189	16,265	15,958	1.91	51	450	2.4	—	11,970	—
1981–2	16,743	17,083	18,621	18,187	2.04	48	500	2.6	—	4,030	—
1982–3	20,119	19,924	20,817	19,533	2.17	48	1,700	8.1	1,400	3,012	—
1983–4	26,058	25,698	28,152	27,116	2.25	47	5,300	19.6	1,400	5,822	1,400
1984–5	29,903	30,184	32,392	32,463	2.17	45	10,100	30.9	4,900	11,300	6,500
1985–6	19,255	19,298	20,637	20,637	2.17	47	4,100	19.9	9,900	19,800	16,000
1986–7	—	17,892	19,498	19,522	1.63	38	5,900	31.3	2,600	21,900	15,600
1987–8	—	19,098	19,718	19,818	1.55	38	8,600	44.1	1,500	18,600	15,800
1988–9	—	15,062	—	14,689	1.50	37	300	2.0	600	18,900	8,200
1989–90[2]	—	13,610	—	13,647	1.40	32	600	4.4	0	10,300	2,600
1990–1[2]	—	10,098	—	10,176	1.33	31				5,600	
1991–2[2]	—	9,761	—		1.38						

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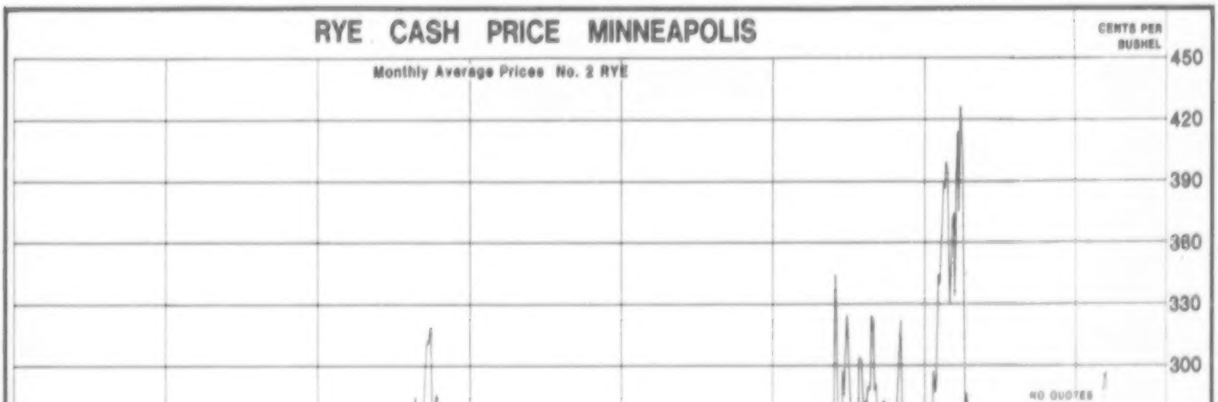
[1] Old-crop rye under loan at end of crop year. [2] Preliminary. [3] Derived by subtracting CCC stocks & loans outstanding from ending carryover. [4] Includes previous crops under reseal. *Source: Economic Research Service, U.S.D.A.* T.573



RYE

Average Price of Cash Rye No. 2 at Minneapolis In Cents per Bushel

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1981–2	352	330	356	371	374	334	394	414	375	426	410	397	378
1982–3	342	276	286	260	261	256	251	246	231	250	244	232	261
1983–4	227	256	265	256	254	252	251	245	250	260	258	244	252
1984–5	227	209	207	206	221	227	231	230	235	236	235	248	226
1985–6	210	215	223	233	248	259	246	228	226	226	219	178	226
1986–7	156	151	160	168	173	202	195	185	185	173	196	163	176
1987–8	165	165	175	198	199	189	185	189	175	167	181	278	189
1988–9	266	264	264	247	269	280	268	268	264	270	257	201	260
1989–90	206	203	214	235	229	225	245	220	222	241	242	232	226
1990–1	215	222	220	220	190	245	252	242	N.Q.	N.Q.	245	245	230
1991–2	216	238	195	288	N.Q.	296	288						

Source: Economic Research Service, U.S.D.A. T.575

High, Low & Closing Prices of May Rye Futures in Winnipeg In Canadian Dollars per Tonne

Year of Delivery		Year Prior to Delivery						Delivery Year					Life of Delivery Range
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1983	High	162.00	162.00	152.50	150.50	139.50	140.20	133.00	126.30	123.20	123.00	130.00	126.00	162.00
	Low	162.00	152.00	138.00	133.80	128.00	129.00	121.00	119.80	116.40	115.30	118.10	116.50	115.30
	Close	162.00	152.50	145.00	133.80	128.20	130.20	121.00	123.10	120.50	122.70	118.70	122.50	—
1984	High	—	—	174.00	176.00	173.30	165.80	158.30	150.00	141.00	140.00	139.30	157.00	176.00
	Low	—	—	154.40	169.50	154.40	156.60	146.00	140.70	125.10	129.20	134.00	131.50	125.10
	Close	—	—	170.10	170.50	162.50	157.70	148.90	141.00	129.30	138.20	135.50	151.50	—
1985	High	—	—	156.00	158.70	156.90	157.20	154.80	145.40	142.30	134.60	133.80	128.80	158.70
	Low	—	—	152.20	152.90	152.20	153.00	145.20	143.00	132.00	132.30	128.30	122.80	122.80
	Close	—	—	153.00	157.70	152.70	154.10	145.20	143.00	132.60	133.70	128.30	122.80	—
1986	High	—	—	131.70	130.80	128.00	132.50	134.00	126.90	118.40	107.00	102.20	116.00	131.70
	Low	—	—	121.50	124.50	121.40	125.00	126.30	119.50	106.60	100.70	91.70	96.30	91.70
	Close	—	—	128.30	124.50	125.00	132.10	126.30	119.70	107.50	102.50	100.50	107.20	—
1987	High	—	—	101.00	102.50	105.00	104.50	103.00	98.70	96.00	89.50	88.20	101.20	105.00
	Low	—	—	100.50	97.40	99.50	100.80	96.00	94.20	82.70	83.00	82.30	85.50	82.30
	Close	—	—	101.00	100.40	101.00	103.10	98.20	95.70	84.70	84.50	85.40	97.50	—
1988	High	—	—	106.50	107.00	107.50	104.70	104.70	108.40	110.30	111.00	107.50	160.00	160.00
	Low	—	—	98.00	104.00	100.00	99.40	102.00	103.00	104.20	104.50	103.50	103.40	98.00
	Close	—	—	106.50	104.80	101.20	103.80	103.00	104.20	110.10	106.50	103.50	160.00	—
1989	High	—	—	168.50	171.00	162.80	165.00	160.50	161.00	158.10	159.00	147.50	142.00	171.00
	Low	—	—	156.00	157.00	157.00	156.00	157.50	151.30	150.50	150.00	128.50	128.00	128.00
	Close	—	—	157.50	159.90	161.50	158.80	158.80	153.50	156.30	150.50	128.50	132.00	—
1990	High	—	—	—	—	132.00	130.00	127.00	125.30	124.00	118.00	114.00	113.20	132.00
	Low	—	—	—	—	129.50	124.00	119.50	119.40	116.00	114.50	102.30	108.90	102.30
	Close	—	—	—	—	130.30	124.00	125.50	122.00	117.60	114.50	106.20	111.80	—
1991	High	—	—	106.80	104.00	104.50	103.50	104.00	100.00	90.50	85.60	92.50	85.00	84.40
	Low	—	—	104.00	100.10	100.50	100.50	101.50	82.30	78.50	79.50	84.00	80.70	68.00
	Close	—	—	104.00	101.10	103.00	101.50	104.00	87.50	78.50	85.60	84.50	80.90	—

Source: Winnipeg Commodity Exchange T.576

Rye Under Price Support Through the End of the Month (Cumulative Total from Current Season's Crop) In Thousands of Bushels

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1982–3	7	344	771	1,008	1,096	1,193	1,324	1,369	1,588	1,709	1,711	1,712	
1983–4	83	1,819	2,228	3,533	3,885	4,199	4,577	4,862	5,141	5,228	5,254	5,256	
1984–5	68	3,581	6,661	8,224	8,653	8,911	9,655	9,830	9,996	10,078	10,066	10,070	
1985–6	567	1,769	2,836	3,516	3,728	3,816	3,955	3,996	4,012	4,060	4,074	4,078	
1986–7	147	1,337	3,249	4,627	5,022	5,140	5,383	5,594	5,722	5,879	5,878	5,888	5,892
1987–8	—	1,237	4,472	5,621	6,498	6,690	7,282	8,164	8,485	8,579	8,605	8,607	8,604
1988–9	—	158	225	239	246	279	301	306	323	325	325	325	325
1989–90	—	352	490	516	523	535	558	558	563	563	563	563	563
1990–1	—	73	157	163	183								

Source: U.S. Department of Agriculture T.578

Salt

U.S. salt production declined in 1991 to 40 million short tons, valued at $756 million, from 40.56 million tons in 1990. The Bureau of Mines estimated producers either sold or used in their own chemical processes 39.6 million tons, down nearly 3 percent from 40.69 million tons in 1990. Apparent consumption fell to 44.3 million tons from 44.78 million a year earlier. Net imports of 4.7 million tons and changes in stocks accounted for the difference between production and consumption.

The chemical industry consumed about 47 percent of the salt sold or used by consumers in 1991, and salt brine accounted for about 86 percent of the salt used for feedstock. Chlorine and caustic soda, which are co-products, traditionally account for 95 percent of the salt used by the chemical industry. The closure of two chloralkali facilities (one in Alabama and one in West Virginia) that used salt brine contributed to the drop in domestic salt production and consumption in 1991. However, U.S. exports of several chlorine-based chemicals increased in fourth-quarter 1991, resulting in higher operating rates for the industry.

Sales of dry salt remained relatively stable in 1991. Rock salt accounted for 35 percent of sales, while vacuum pan salt was 10 percent and solar salt accounted for 8 percent. Salt for highway deicing accounted for 25 percent of U.S. demand. Other end uses included: sales to distributors, 10 percent; food and agricultural, 7 percent; general industrial, 5 percent; and primary water treatment, 1 percent.

World Production of All Salt In Thousands of Short Tons

Year	Brazil	Canada	China	France	Germany	India	Italy	Japan	Mexico	Netherlands	Poland	Spain	United Kingdom	United States	USSR	World Total
1984	4,990	11,282	17,950	7,880	13,461	8,520	4,385	1,053	6,798	4,050	5,193	3,735	7,856	39,256	18,200	190,258
1985	2,964	11,117	15,924	7,841	14,419	10,889	4,129	1,300	7,129	4,579	5,363	3,571	7,877	40,102	17,747	190,629
1986	2,425	11,389	19,070	7,808	14,443	11,153	4,419	1,510	6,840	4,148	5,976	3,418	7,800	36,663	16,865	192,755
1987	5,015	11,165	19,800	8,642	14,844	10,915	4,702	1,540	7,047	4,386	6,799	3,522	7,800	36,532	16,975	196,852
1988	5,100	11,781	24,250	8,720	14,997	10,145	4,839	1,545	7,924	4,071	6,280	3,400	7,800	38,980	17,100	202,705
1989[1]	4,840	12,279	30,850	8,860	14,440	9,904	4,834		8,435		6,280	3,400	6,390	38,856	16,300	209,988
1990[2]		12,232	22,050	8,310	16,630	10,473	4,500		7,865		5,300		6,280	40,693	16,000	202,339
1991[2]		12,200	28,000	8,500	16,500	10,000	4,700		8,000		5,500		6,300	40,000	15,500	205,000

[1] Preliminary. [2] Estimate. *Source: Bureau of Mines* T.581

Salient Statistics of the Salt Industry in the United States In Thousands of Short Tons

			Sold or Used by Producers													
			Evaporated (Mfg.)				Rock Salt							Exports		
			Bulk													
Year	Net Import Reliance as a % of Apparent Consumption	Avg. Value F.O.B. Mine Vacuum & Open Pan $ Ton	Open & Vacuum Pans	Solar	Pressed Blocks	Total Evaporated	Bulk	Pressed Block	Total Salt Rock	Salt in Brine	Total Salt	Value[3] Million $	Imports for Consumption	Total	To Canada	Apparent Consumption
1984	15	92.78	3,322	2,345	542	6,209	13,276	71	13,348	19,669	39,225	675.1	7,545	820	792	45,950
1985	14	92.66	3,604	2,666	455	6,725	14,000	70	14,690	19,107	40,067	739.6	6,207	904	883	45,370
1986	12	91.27	3,583	2,562	465	6,610	11,927	67	12,598	17,920	36,663	665.4	6,665	1,165	1,091	42,163
1987	11	94.21	3,776	2,627	487	6,890	11,331	73	11,965	18,124	36,493	684.2	5,716	541	477	41,668
1988	11	97.71	3,824	2,617	462	6,903	12,222	68	12,900	19,601	38,940	699.3	5,474	884	717	43,530
1989[1]	10	92.73	3,975								38,856	776.8	6,084	1,567		43,373
1990[2]	9	100.32									40,693		6,580	2,498		44,775
1991[2]	11	100.00									39,600		6,700	2,000		44,300

[1] Preliminary. [2] Estimate. [3] Values are f.o.b. mine or refinery & do not include cost of cooperage or containers. *Source: Bureau of Mines* T.582

Salt Sold or Used by Producers in the U.S. by Classes & Consumers or Uses In Thousands of Short Tons

Year	Chemical[4]	Tanning Leather	Textile & Dyeing	Meat Packers[2]	Canning	Baking	Agri Distribution	Feed Dealers	Feed Mfgs	Rubber	Oil	Paper & Pulp	Metal Processing	Water Treatment	Grocery Stores	Water Conditioning Distal.	Ice Control &/or Stabilization
1984	19,701		135	436	242	124		923	590	41	860	307			859		
1985	21,204	137	186	415	263	126	387	863	412	36	965	311	382	553	901	888	11,180
1986	19,801	152	226	436	271	134	286	940	388	133	627	307	304	525	946	1,028	10,541
1987	18,715	124	237	452	296	158	302	995	416	145	597	387	311	392	1,007	1,063	9,878
1988	20,734	123	229	460	278	152	353	998	437	27	819	376	374	463	955	1,051	11,125
1989[1]		116	233				584	893	400	34	720	373	400	329	970	970	11,461
1990[1]																	

[1] Preliminary. [2] Prior to 1984, data also includes tanners & casing mfg. [3] Also service companies. [4] Chloralkali producers & other chemical.
Source: Bureau of Mines T.583

Sheep & Lambs

The U.S. inventory of sheep and lambs in the U.S. on January 1, 1992 amounted to 10.9 million head, 3 percent less than a year earlier. The total value of the inventory was 9 percent lower than a year earlier at $666 million. The average value per head had fallen by 6 percent from the year before to $61.40.

Sheep and lambs on feed in January 1992 for the slaughter market in 25 major feeding states totaled 1.81 million head, 4 percent more than a year earlier. The number of domestic sheep operations in 1991 totaled 105,710, 3 percent less than the year before.

The world sheep population was about 880 million in 1991 and was expected to decline to 850 million in 1992. Sheep meat production worldwide in 1991 was above the levels of the late 1980s, as the collapse in wool prices in 1989 led producers to slaughter portions of their stock.

World Sheep Numbers in Specified Countries In Millions of Head

Year	Argentina	Australia	Bulgaria	China[4]	France	India	Italy	New Zealand	Romania	Spain[2]	South Africa	Turkey	United Kingdom	United States	Uruguay	USSR	World
1983	33.5	133.2	10.8		12.1	49.5	9.3	70.3	16.9	17.5	32.0	47.5	22.9	12.1	23.3	142.2	669
1984	33.9	139.2	11.0		11.9	51.1	10.7	70.3	18.5	17.6	31.3	47.7	23.3	11.5	23.3	145.3	681
1985	29.4	149.7	10.5		11.6	52.8	11.1	69.7	18.6	17.5	30.3	47.8	23.9	10.4	22.8	142.9	686
1986	29.2	155.6	9.7		11.2	54.5	11.3	67.9	18.6	17.3	29.5	47.0	24.5	10.0	24.8	140.9	690
1987	29.0	158.8	9.6	166.2	10.6	50.7	11.5	69.2	18.8	20.0	29.8	46.8	26.0	10.6	25.7	142.2	840.9
1988	29.2	162.5	8.9	180.3	10.4	45.0	11.5	64.2	18.9	20.3	29.6	46.4	27.8	10.9	27.4	140.8	848.9
1989	29.3	171.3	8.6	201.5	11.5	46.2	11.6	64.6	16.2	23.8	30.9	45.7	29.0	10.9	28.4	140.7	885.1
1990	29.4	177.8	8.0	211.6	11.5	47.3	11.7	60.6	15.4	25.4	32.7	45.3	29.5	11.4	28.4	138.4	899.0
1991[1]	27.6	175.6	7.3	211.6	11.5	48.2	11.6	57.9	15.0	24.0	32.6	45.0	29.8	11.2		133.3	884.4
1992[3]	26.5	157.9	7.2	205.7	11.6	48.2	11.6	57.9	14.8	25.0	32.5	44.6	29.9	10.9		128.3	853.9

[1] Preliminary. [2] One year old & older. [3] Estimate. [4] Mainland includes goats. *Source: Foreign Agricultural Service, U.S.D.A.* T.584

Salient Statistics of Sheep & Lambs in the United States Avg. Lv. Weight

Year	On Hand Jan. 1 (Mil. Head)	Lamb Crop (Mil. Head)	In Shipments (Ths. Head)	Marketings[2] (Ths. Head)	Slaughter Farm (Ths. Head)	Slaughter Total[4] (Ths. Head)	Production Mil. Lbs.	SH.&LB. Federally Inspected in Ths.	Value of Production (Millions of Dollars)	Cash Receipts[3] (Millions of Dollars)	Value of Home Consumption (Millions of Dollars)	Gross Income (Millions of Dollars)	Farm Value (1/1) All	Farm Value (1/1) $ per Head
1983	12.1	8.2	1,816	8,924	171	6,792	767.6	6,412	356.0	422.8	11.0	433.9	628.6	51.80
1984	11.6	7.8	1,839	8,828	141	6,900	694.1	6,549	377.9	459.7	13.3	472.9	602.8	52.10
1985	10.7	7.5	1,696	8,047	136	6,300	694.2	5,976	434.2	514.5	12.3	526.9	654.1	61.10
1986	10.1	7.4	1,775	7,394	127	5,762	721.5	5,464	444.7	481.3	12.6	493.9	684.0	67.40
1987	10.6	7.3	1,772	7,256	111	5,312	728.9	5,042	502.6	558.1	14.5	572.5	799.3	75.70
1988	10.9	7.2	1,518	7,334	99	5,392	720.6	5,122	420.2	478.0	9.7	487.6	985.0	90.00
1989	10.9	7.7	1,634	7,531	98	5,572	773.9	5,295	448.5	491.1	9.7	500.8	894.9	82.40
1990[1]	11.4	7.7				5,750		5,469					901.5	79.30
1991[5]	11.2	7.6				5,812		5,501					734.9	65.60
1992[5]	10.9	7.1											666.1	61.40

[1] Preliminary. [2] Excludes interfarm sales. [3] Includes receipts from marketings & from sales of farm slaughter meats. [4] Includes all commercial & farm. [5] Estimate. *Source: Crop Reporting Board, U.S.D.A.* T.585

Sheep and Lambs on Farms in the United States, January 1 Thousands of Head

Year	All Sheep and Lambs[2] Minnesota	California	Colorado	Idaho	Missouri	Montana	New Mexico	Ohio	South Dakota	Texas	Utah	Wyoming	Iowa	Total[2]	Total[1] Stock
1983	300	1,115	750	429	126	560	610	295	680	2,225	590	1,060	457	12,140	10,479
1984	225	1,115	690	383	128	564	589	265	740	1,970	568	1,090	425	11,487	9,769
1985	255	1,065	675	313	123	515	538	265	639	1,810	515	860	360	10,443	8,847
1986	213	1,065	600	320	101	423	525	275	540	1,810	484	819	350	9,983	8,491
1987	237	980	690	314	110	523	480	300	605	1,930	464	775	375	10,334	8,826
1988	258	990	755	324	103	530	489	270	610	1,960	478	865	405	10,945	9,364
1989	290	940	825	287	125	600	516	246	590	1,870	503	837	420	10,858	9,212
1990	285	1,000	840	286	138	663	495	270	590	2,090	509	805	490	11,363	9,601
1991[3]	300	1,015	710	272	134	683	462	305	640	2,000	508	830	465	11,200	9,471
1992[3]	293	995	710	273	111	688	445	275	602	2,140	488	850	345	10,850	9,043

[1] Stock sheep & lambs; does not include sheep & lambs on feed for market. [2] Includes sheep & lambs on feed for market and stock sheep & lambs. [3] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.586

Average Wholesale Price of Slaughter Lambs (Choice) at San Angelo[1] Texas In Dollars Per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	60.50	58.75	58.75	60.50	62.25	61.75	61.50	62.76	63.58	63.35	62.98	60.08	61.39
1985[1]	65.12	67.58	70.12	72.50	73.32	70.97	71.50	71.69	69.75	67.25	64.17	59.33	68.61
1986	65.81	67.50	63.58	74.22	81.25	77.36	73.84	68.12	66.38	59.65	65.42	73.33	69.71
1987	78.56	75.75	86.50	93.12	94.50	84.83	76.83	71.83	70.05	66.25	65.00	73.83	78.09
1988	83.53	77.25	83.75	76.50	72.67	59.38	59.00	56.19	59.50	63.94	65.55	68.83	68.26
1989	68.13	68.83	70.90	78.17	73.56	72.63	67.79	67.28	63.81	59.63	56.06	61.00	67.32
1990	54.80	60.38	63.69	63.13	62.25	53.56	53.25	51.20	51.75	52.50	50.42	48.08	55.42
1991	47.63	45.81	54.88	55.50	57.70	55.75	55.50	54.31	53.25	51.20	52.08	54.95	53.21

[1] Prices prior to 1985 are for lambs (average) at Omaha. *Source: Economic Research Service, U.S.D.A.* T.587

Federally Inspected Slaughter of Sheep & Lambs in the United States In Thousands of Head

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1984	540	548	586	592	558	500	511	561	528	588	524	514	6,549
1985	544	473	564	512	494	423	485	496	480	554	460	490	5,976
1986	507	441	524	477	417	406	432	426	495	495	401	442	5,464
1987	418	390	432	477	363	407	411	400	459	446	399	439	5,042
1988	380	408	535	388	414	413	387	442	452	437	418	447	5,122
1989	418	415	505	393	435	423	398	476	440	468	467	457	5,295
1990[1]	479	431	481	466	465	426	430	463	422	490	465	449	5,469
1991[1]	495	449	546	436	443	388	431	438	456	501	449	471	5,503

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.588

Cold Storage Holdings of Lamb and Mutton, on 1st of Month In Thousands of Pounds

Year	Jan	Feb.	Mar.	Apr.	May	June	July	Aug	Sept	Oct	Nov	Dec.
1984	10,701	8,312	7,542	8,057	9,123	8,839	8,678	8,404	8,026	8,889	8,403	7,890
1985	7,066	7,339	6,840	6,547	7,644	8,068	8,931	9,193	9,541	9,237	10,033	12,525
1986	12,766	11,615	13,813	11,615	12,754	12,742	14,068	14,318	15,459	14,450	14,641	13,843
1987	12,603	11,550	13,565	13,595	13,248	13,997	12,007	9,311	8,468	6,978	7,036	8,637
1988	7,949	8,069	6,190	7,056	7,639	8,018	8,738	8,537	7,253	6,827	6,396	6,001
1989	6,115	7,267	6,487	6,619	6,558	6,827	8,003	7,841	7,731	7,057	7,707	7,990
1990	7,625	7,844	8,468	7,905	7,810	8,052	9,685	10,107	9,144	8,929	8,458	7,210
1991	8,414	9,438	9,829	8,070	7,277	8,436	8,002	6,917	6,130	5,287	5,739	6,791

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.589

Average Price Received by Farmers for Sheep in the U.S. In Dollars per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1984	18.20	19.80	18.70	16.30	13.00	13.80	16.80	17.30	15.90	15.20	18.10	24.30	16.40
1985	26.50	26.50	26.20	24.70	23.00	22.00	27.20	26.10	25.30	21.50	23.60	26.60	23.90
1986	29.90	26.10	22.80	24.90	24.10	25.90	26.70	26.40	27.30	25.50	26.10	29.30	25.60
1987	31.60	32.20	30.70	28.60	28.30	25.70	28.50	32.00	32.50	31.50	30.90	32.30	29.50
1988	34.70	30.10	29.70	26.00	23.90	23.20	25.00	25.30	25.00	25.30	27.80	29.10	25.60
1989	34.20	35.70	30.30	25.40	21.60	22.20	24.60	23.40	23.10	22.70	29.50	31.10	24.40
1990	32.20	30.90	30.00	23.50	19.70	19.60	24.70	24.30	18.90	19.20	20.40	22.40	23.81
1991[2]	23.50	19.90	21.50	21.30	18.30	21.00	20.30	19.20	18.90	18.20	19.80	18.30	20.01

[1] Weighted average by quantities sold. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.590

Average Price Received by Farmers for Lambs in the U.S. In Dollars per 100 Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1984	60.00	59.20	58.20	60.60	59.50	57.50	58.60	61.00	61.80	62.40	63.30	61.90	60.10
1985	63.40	66.70	68.00	68.40	72.40	69.70	70.80	70.80	70.20	67.80	66.00	62.70	67.70
1986	63.90	67.00	64.90	69.10	76.30	74.00	71.90	69.50	67.60	62.50	69.30	73.20	69.00
1987	76.60	76.00	80.80	86.10	90.10	83.50	78.70	76.10	76.80	71.90	65.70	72.80	77.60
1988	80.70	80.40	80.20	74.80	72.60	60.20	60.00	59.80	64.20	66.20	66.30	68.60	69.10
1989	67.40	68.40	72.50	75.20	73.10	70.60	68.60	66.60	65.90	62.00	58.70	59.00	66.10
1990	56.40	59.80	66.00	62.90	59.80	55.40	54.40	54.00	52.80	51.90	50.10	48.60	56.00
1991[2]	48.00	45.80	51.10	54.60	57.60	55.30	57.70	53.40	53.60	51.70	50.70	50.25	52.48

[1] Weighted average by quantities sold. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.591

Silk

U.S. imports of silk clothing amounted to 50.5 million pounds in raw-silk equivalent in the first nine months of 1991, in line with 68.6 million in all of 1990, according to the Commerce Department. Imports of silk fabric and thread during the 9-month period totaled 5.2 million pounds and compared with 7.2 million pounds for all of 1990.

Additionally, the U.S. purchases silk tablecloths, placemats, napkins, bed coverings, and carpets from overseas. Imports of these home furnishings were strong in the first nine months of 1991 and amounted to 2.57 million pounds, against 1.79 million for all of 1990.

China is by far the largest producer of raw silk, followed by India. Japan, North and South Korea, Thailand, and Brazil are other major producers. All of these countries are exporters. The chief importers are Japan and Italy, and Hong Kong is a major importer and reexporter.

In 1991, the U.S. threatened to impose tariffs of 100 percent against Chinese goods, including silk apparel, unless Beijing agreed to honor patents and copyrights protecting U.S. computer software, prescription drugs and movies.

Futures Markets

Raw silk and dried cocoon futures are traded in Japan.

World Silk Production & U.S. Raw Silk Deliveries

	World Production	Raw Silk Deliveries (In Bales of 132 lbs.)												
Year	Mil. Lbs.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1986	139	410	504	197	244	225	227	555	Not Available					4,272
1987	139	411	680	572	526	245	447	253	327	330	470	239	448	4,948
1988	141	292	430	559	317	302	189	203	613	310	126	367	108	3,816
1989	146	358	234	471	329	405	564	353	401	288	317	475	442	4,637
1990[1]	146	455	352	387	158	342	150	248	53	49	103	152	139	2,588

[1] Preliminary. *Source: U.S. Dept. of Agriculture; International Silk Association*

World Production of Raw Silk In Metric Tons

	Brazil	China	India	Japan	No. Korea	So. Korea	Thailand	USSR	World Total
1987	1,800	40,940	9,498	7,864	3,700	1,413	1,200	4,200	72,597
1988	1,900	42,041	10,255	6,862	3,800	1,355	1,250	4,300	73,866
1989	1,900	42,044	10,500	7,000	3,000	1,400	1,250	4,400	73,589

Source: U.N. Food and Agriculture Organization

World Demand for Natural Fibers In Thousands of Metric Tons

	Raw Silk	Raw Wool	Raw Cotton	Total
1986	63	1,745	18,280	20,088
1987	63	1,787	18,243	20,093
1988	64	1,830	18,484	20,378
1989	66	1,887	18,733	20,686
1990	66	1,964	18,714	20,744

Source: Fiber Organon, Fiber Economics Bureau

U.S. Imports of Apparel Containing Silk, Raw Silk Equivalent In Thousands of Pounds

	Tops	Bottoms	Suits and Coats	Sweaters	Other Apparel	Total
1989	18,182	10,843	9,940	30,969	6,751	76,684
1990	18,807	11,876	10,504	21,107	6,268	68,563

Source: U.S. Bureau of the Census

Silver

After diving to a 17-year low of $3.58/oz. (basis the Handy & Harman price), silver prices worked higher on hopes that the swift end of the Gulf War would lead the U.S. out of the 1990/91 recession. Spot prices peaked at $4.53/oz. on June 10. But record silver inventories, low inflation and the economy's inability to snap out of the recession (in spite of the lowest interest rates in decades) doomed the rally. Spot silver ended 1991 at $3.82, down 8.4 percent from $4.17 a year earlier.

This performance was not out of line with silver's long-run track record as an investment. According to a study by Ibbotson Associates, publishers of standard reference sources for investment rates of return, silver was the worst investment among all asset classes between January 1, 1975, and March 31, 1991. Silver had the worst compound annual return, -0.3 percent, compared with 15.3 percent for large-capitalization stocks. Silver also had the highest annualized standard deviation of monthly returns, 37 percent, compared with 15.9 percent for large stocks and 0.8 percent for T-bills.

The low prices forced several silver mines to close or curtail production, particularly in the Coer d'Alene region of Idaho. As a result, U.S. mine production of silver declined for the first time in six years to an estimated 57.9 million ounces from 69.8 million in 1990, according to the Bureau of Mines. Still, silver was produced by about 150 mines in 17 states, mostly as a byproduct at copper, gold or lead and zinc mines. Because silver has to be separated from the other metals in any case, this output is not particularly sensitive to silver prices.

Handy & Harman estimated that only 41 percent of world silver production comes from "strictly silver" mines, vein deposits in which silver is the principal metal component. They account for about one-third of the world's estimated silver reserves of 9 billion ounces. Many of those deposits may be classified as gold mines, however, because the value of the gold dwarfs the value of the larger amounts of silver they produce. The remaining two-thirds of the world's resources are associated with base metals. Recent major base metals discoveries are expected to yield significant amounts of byproduct silver.

World mine production was expected to fall by 6 percent in 1991 to 456.5 million ounces from 485.7 million in 1990. Mexico was the largest producer with 67.5 million ounces, down nearly 11 percent from 75.4 million a year earlier. Despite continued labor strife and political turmoil, Peruvian output increased to 57.9 million ounces from 55.5 million in 1990.

U.S. apparent silver demand (defined as refinery production from primary materials and old scrap and net imports of bullion) fell by 10 percent in 1991 to 115.7 million ounces. The Bureau of Mines stopped reporting industrial silver usage in 1988 because of problems with its survey. Privately published surveys vary considerably, reflecting the problem of separating unreported investor holdings from commercial stocks. However, it was estimated that about 50 percent of the refined silver the U.S. consumed industrially in 1991 went into photographic products; 25 percent to electrical and electronic products; 10 percent to electroplated ware, sterlingware and jewelry; 5 percent to brazing alloys; and 10 percent to other uses, including dentistry.

U.S. coinage consumed 9.6 million ounces in 1991, up 13 percent from 8.5 million ounces in 1990. That silver came from the National Defense Stockpile.

Futures Markets

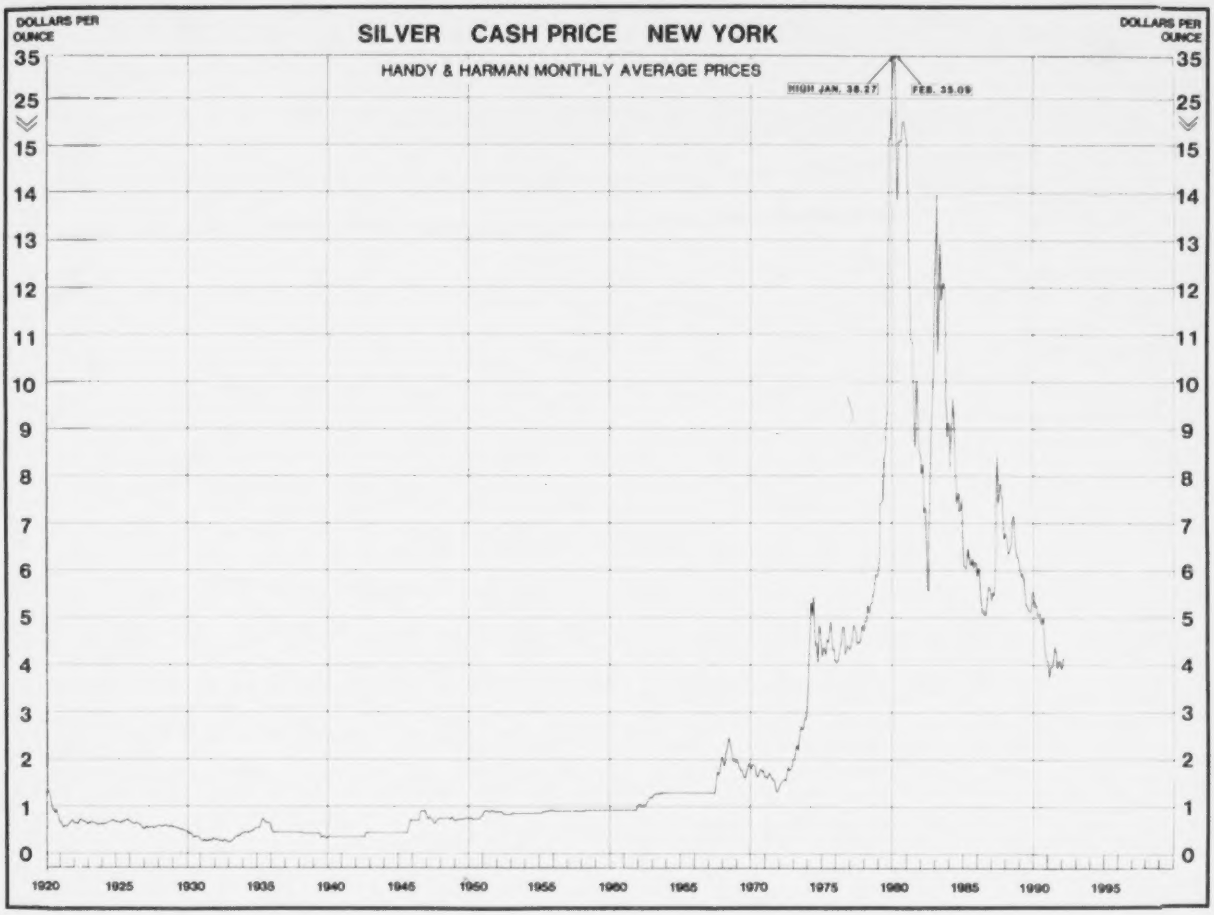
Silver futures and options are traded on the New York Commodity Exchange (COMEX), and on the Chicago Board of Trade.

World Mine Production of Silver, by Selected Countries In Metric Tons[4] (2,204.6 lbs.)

Year	Argentina	Australia	Bolivia[1]	Canada	West Germany	Honduras	Japan	Mexico	Morocco	Peru	Poland	United States	USSR[2]	Yugoslavia	Zaire (Congo)	World Total[2]
1976	2.25	25.03	5.34	41.20	1.03	3.18	9.30	42.64	2.05	35.58	17.8	34.33	44.0	4.63	2.47	316.4
1977	2.45	27.53	5.81	42.24	1.06	2.82	9.60	47.03	2.82	39.73	20.7	38.17	45.0	4.68	2.73	331.3
1978	2.16	26.12	6.29	40.73	.80	2.79	9.66	50.78	3.13	37.02	21.9	39.39	46.0	5.13	4.39	345.0
1979	2.21	26.76	5.74	36.87	1.04	2.43	8.68	52.17	3.28	39.25	22.6	37.90	46.0	5.21	3.89	348.1
1980	2.36	24.65	6.10	33.34	1.06	1.77	8.60	50.05	3.15	44.42	24.63	32.33	46.0	4.79	2.73	342.8
1981	2.52	23.91	6.39	36.30	1.13	1.82	9.01	52.92	2.12	46.94	20.58	40.68	46.5	4.44	2.58	361.6
1982	2.68	29.16	5.47	42.25	1.28	2.10	9.84	59.18	2.64	41.96	21.12	40.25	46.9	3.34	1.75	371.2
1983	2.50	33.21	6.03	35.56	1.17	2.59	9.88	63.61	2.85	50.48	21.80	43.43	47.2	3.99	1.29	387.7
1984	1.98	31.26	4.56	42.66	1.23	2.70	10.40	75.34	2.41	53.08	23.92	44.59	47.4	4.05	1.23	413.9
1985[4]	68	1,086	111	1,197	38	86	339	2,153	85	1,811	831	1,227	1,490	156	43	13.051
1986	66	1,023	95	1,088	28	54	351	2,303	49	1,926	829	1,074	1,500	177	34	12,970
1987	60	1,119	142	1,375	31	23	281	2,415	44	2,054	831	1,241	1,500	165	37	13,757
1988	79	1,118	232	1,371	31	58	252	2,359	226	1,552	1,063	1,661	1,490	139	24	14,167
1989[2]	78	1,000	367	1,285	31	60	156	2,306	225	1,840	1,060	2,007	1,490	140	20	14,452
1990[2]				1,800				2,346		1,725		2,170	1,400			15,106
1991[2]				1,200				2,100		1,800		1,800	1,300			14,200

[1] Exports. [2] Estimate. [3] Preliminary. [4] Data prior to 1985 are in millions of troy ounces. *Source: Bureau of Mines* T.594

SILVER



Average Price of Silver in New York (Handy & Harman) In Cents per Troy Ounce (.999 Fine)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1973	201.7	223.6	230.9	220.7	240.1	262.1	270.6	263.7	267.5	288.6	286.0	313.7	256.0
1974	363.7	535.9	532.6	503.6	543.2	489.6	441.6	443.1	404.9	483.0	469.4	439.1	470.8
1975	419.3	437.0	434.5	420.9	453.8	448.9	470.5	492.5	451.6	432.9	433.2	408.5	442.0
1976	406.3	408.6	418.9	435.1	448.9	481.2	478.0	423.7	429.5	422.5	437.3	434.7	435.4
1977	440.9	452.7	484.2	477.7	469.2	444.3	449.8	444.4	453.9	476.3	482.8	470.6	462.3
1978	493.4	493.6	526.8	511.6	512.0	531.6	533.1	549.5	557.5	591.8	586.5	593.0	540.0
1979	625.5	741.7	745.4	749.3	836.6	853.8	913.5	933.4	1,395.9	1,678.1	1,655.3	2,179.3	1,109.0
1980	3,827.2	3,508.5	2,413.3	1,384.1	1,253.3	1,574.8	1,606.0	1,589.7	2,014.4	2,018.1	1,864.8	1,639.3	2,063.3
1981	1,475.2	1,306.5	1,236.9	1,091.7	1,084.8	1,000.1	863.1	892.3	1,003.6	925.1	854.7	843.2	1,048.1
1982	803.1	826.8	721.3	731.1	667.4	557.8	649.7	713.6	872.5	948.8	991.8	1,058.6	795.0
1983	1,239.6	1,396.4	1,061.9	1,169.4	1,295.3	1,174.9	1,208.8	1,209.6	1,191.5	984.1	883.7	912.1	1,143.9
1984	818.2	912.7	965.1	922.1	897.2	874.4	741.6	761.3	726.3	731.7	748.9	669.4	814.1
1985	609.8	607.0	601.4	645.8	628.1	617.2	610.4	624.7	605.4	618.8	613.4	588.8	614.2
1986	605.3	587.4	503.9	522.9	511.5	515.3	504.9	521.8	568.3	566.7	559.6	536.4	547.0
1987	552.88	548.76	568.16	742.79	843.90	741.09	767.84	784.74	759.05	755.80	666.18	679.02	700.85
1988	673.25	632.48	641.28	647.83	654.26	703.68	714.65	670.80	636.48	628.45	627.53	610.83	653.46
1989	597.17	589.08	592.98	579.08	544.70	528.02	523.65	517.93	513.30	513.30	546.53	554.28	550.00
1990	524.30	527.84	505.82	504.58	507.39	490.60	485.90	498.15	479.03	436.59	416.90	406.84	482.00
1991	402.82	372.34	396.90	397.07	404.07	438.85	430.38	393.80	403.60	410.22	406.05	390.90	403.92
1992	412.08												

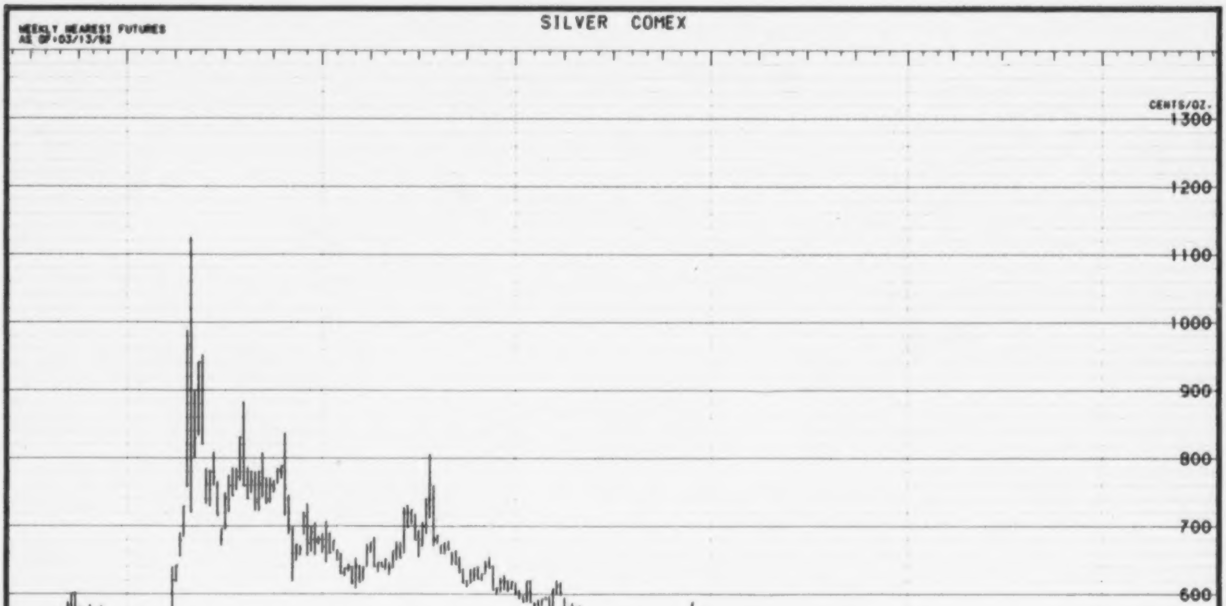
Source: Handy & Harman

T.595

World[2] Silver Consumption In Millions of Troy Ounces

	Industrial Uses									Coinage							
Year	Canada	France	Germany	India	Italy	Japan	Un. Kingdom	United States	World Total	Canada	France	W. Germany	Austria	Mexico	United States	World Total	World Total
1973	8.6	14.3	64.7	13.0	41.5	69.0	31.0	195.9	477.8	1.4	.1	9.5	6.6		.9	29.2	507.0
1974	9.6	15.5	59.9	15.0	38.6	46.5	25.0	177.0	409.4	8.9	.1	8.8	5.6		1.0	27.9	436.9
1975	10.6	21.2	38.9	13.0	28.9	46.4	28.0	157.7	376.8	10.4	5.2	4.3	13.4	—	2.7	38.8	415.6
1976	9.5	19.0	50.8	18.0	32.1	60.7	28.0	170.5	437.5	8.4	6.7	2.9	6.9	—	1.3	29.7	467.2
1977	8.8	20.6	59.5	17.6	33.8	63.2	32.2	153.6	433.6	.3	6.9	2.6	3.0	4.2	.4	23.4	457.0
1978	9.0	22.2	47.2	20.0	41.8	64.8	29.0	160.2	442.6	.3	11.1	3.6	4.5	6.3	.1	36.3	478.9
1979	8.1	21.5	46.1	19.0	31.1	66.4	26.5	157.2	434.2	.3	7.7	3.7	5.0	5.0	.1	27.8	462.0
1980	8.7	20.2	29.1	19.0	21.8	61.7	20.5	124.7	354.5	.2	—	—	4.3	6.1	.1	13.7	368.2
1981	9.4	20.6	33.8	19.0	12.9	59.8	18.5	116.6	344.0	.2	—	—	3.0	—	—	9.0	353.0
1982	9.0	18.6	35.9	16.1	9.6	63.2	20.0	118.8	345.4	.3	—	—	4.0	—	2.5	12.8	358.2
1983	8.9	18.6	30.3	12.9	9.0	71.5	18.0	116.3	340.7	.4	—	—	2.0	—	11.2	18.2	358.9
1984	9.0	17.0	30.1	16.1	11.6	78.7	19.0	114.8	353.3	.3	—	—	—	2.0	3.4	8.7	362.0
1985	9.1	18.0	31.7	20.9	4.6	73.7	19.0	118.6	447.1	.3	2.2	0	—	3.0	.4	8.9	456.0
1986	9.6	16.4	36.9	22.5	14.5	89.5	20.5	121.7	495.1	2.0	2.4	0	1.0	2.0	7.5	16.9	512.0
1987	10.4	19.6	40.5	18.5	24.4	92.2	21.5	118.5	496.5	1.2	2.3	5.2	2.0	2.3	15.1	30.0	526.5
1988	10.8	22.5	47.2	22.5	18.0	103.9	22.3	120.0	536.0	2.0	2.2	5.2	6.5	1.5	8.8	25.7	561.7
1989	10.9	28.0	45.8	25.7	19.8	102.1	22.5	118.8	546.7	3.3	4.0	9.5		2.0	9.4	34.4	581.1
1990[1]	9.7	28.6	51.0	32.2	16.4	103.1	23.2	115.2	544.7	3.0	1.9	1.9			7.6	25.5	570.2

[1] Preliminary. [2] Non-communist areas only. *Source: Handy & Harman* T.597



U.S. Mine Production of Recoverable Silver In Metric Tons[3]

Year	Arizona	California	Colorado	Idaho	Oregon	Missouri	Montana	Nevada	New Mexico	New York	Tennessee	So. Dakota	Utah	Alaska	Total
1982	6,309	34	1,934	14,830	—	2,241	6,169	3,142	805	27	N.A.	26	4,343	2	40,248
1983	4,492	27	2,146	17,684	1	2,021	5,708	5,179	N.A.	33	N.A.	62	4,567	4	43,431
1984	4,247	N.A.	2,200	18,869	N.A.	1,401	5,653	6,477	N.A.	N.A.	N.A.	50	N.A.	N.A.	44,592
1985[3]	152	4	17	586	—	51	125	154	N.A.	N.A.	N.A.	2	N.A.	N.A.	1,227
1986	140	5	20	349	—	45	148	199	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1,074
1987	114	4	27	N.A.	N.A.	37	185	379	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1,241
1988	152	15	27	340	N.A.	45	192	608	N.A.	N.A.	N.A.	3	N.A.	1	1,661
1989	171	21	N.A.	439	N.A.	53	194	625				4			2,007
1990[1]	173	21	23	436		35	220	708							2,171
1991[1]	135	22	17	310		35	208	429							1,633

[1] Preliminary. [2] Forecast. [3] Data prior to 1985 are in thousands of troy ounces. *Source: Bureau of Mines* T.599

U.S. Consumption of Silver, by End Use In Thousands of Troy Ounces

						Electrical & Electronic Products									
Year	Bearings	Brazing Alloys & Solders	Catalysts	Dental & Medical	Electroplated Ware	Batteries	Contacts & Conductors	Jewelry	Mirrors	Photographic Materials	Sterling Ware	Coins, Medallions[2]	Total Net Industrial Consumption	Coinage	Total Consumption
1982	228	7,384	2,418	1,688	3,254	4,167	27,730	6,260	970	51,769	6,579	1,832	118,840	1,846	120,686
1983	170	5,837	2,424	1,532	3,154	2,800	26,298	6,861	970	51,827	7,022	2,979	116,440	2,128	118,568
1984	260	5,889	2,448	1,569	3,542	2,671	25,633	5,773	970	55,322	3,638	2,564	114,841	2,665	117,506
1985	190	5,593	2,409	1,480	3,660	2,470	27,509	5,779	970	57,895	3,527	2,514	118,555	362	118,917
1986	375	6,467	2,313	1,474	3,724	3,309	27,429	4,666	970	58,554	3,935	3,957	121,743	7,535	129,278
1987[1]	317	7,000	2,474	1,409	3,010	2,413	23,457	4,514	1,000	58,000	3,897	4,194	118,500	15,074	133,574
1988[2]		6,000			Electrical Products			30.0		60,000			120,000	8,840	133,200
1989[3]		6,500			″	″		30.0		59,300			118,800	9,400	172,650
1990[3]		6,000						28.0		60,000			115,500	7,600	123,100

[1] Preliminary. [2] Includes commemorative objects. [3] Estimate. *Source: Bureau of Mines* T.598

Commodity Exchange, Inc. (COMEX) Warehouse Stocks of Silver In Millions of Ounces

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1982	77.6	76.3	78.5	77.1	79.9	78.0	72.4	66.2	60.0	60.7	59.2	80.6
1983	91.2	90.9	106.4	96.8	91.3	69.8	91.1	93.7	113.6	129.3	129.4	129.6
1984	127.4	123.7	116.8	117.2	115.3	114.3	121.8	120.3	116.2	115.0	113.4	115.4
1985	118.9	121.5	122.3	106.6	106.0	104.2	133.7	140.8	141.0	143.6	149.2	153.7
1986	155.2	142.3	145.9	151.3	154.9	144.6	151.9	150.7	158.6	156.8	138.1	145.1
1987	144.9	150.2	160.0	157.9	157.7	156.1	152.5	151.9	158.6	155.7	154.8	155.8
1988	156.3	156.3	156.9	155.8	161.3	164.3	167.1	169.7	175.6	178.8	175.3	178.5
1989	174.4	179.2	190.6	194.3	200.4	204.1	206.0	207.3	210.4	212.3	226.6	237.9
1990	238.8	240.8	243.4	252.1	253.8	255.4	251.6	251.5	255.8	260.2	258.6	257.7
1991	265.3	266.2	263.8	260.7	263.4	263.5	266.1	275.8	270.7	270.2	265.9	260.6
1992	270.8	270.0										

Source: Commodity Exchange of New York (COMEX) T.600

United States Production[1] of Refined Silver from All Sources In Thousands of Troy Ounces

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	9,043	8,407	10,300	8,856	9,095	8,840	7,781	8,518	7,872	8,307	9,607	11,655	108,252
1983	9,121	8,533	9,063	9,653	7,663	10,210	8,579	8,342	7,886	8,738	9,880	12,058	112,200
1984	7,094	8,414	8,446	9,827	10,423	8,921	8,879	11,226	8,971	8,386	10,200	13,920	116,400
1985	8,414	7,930	8,645	9,238	9,344	9,850	8,578	9,885	8,191	8,429	8,987	11,467	109,000
1986	7,897	7,835	7,340	8,727	7,547	7,129	3,988	6,404	6,932	7,869	8,216	10,197	90,081
1987	8,170	6,098	7,047	7,946	8,473	7,839	8,777	7,731	7,703	6,692	6,955	9,024	92,455
1988	7,852	7,264	9,453	7,956	7,891	9,453	10,562	9,903	7,374	8,074	9,545	9,726	105,053
1989	10,025	9,488	9,883	9,650	12,006	8,956	7,722	9,337	7,978	7,901	10,099	8,999	112,044
1990	8,938	7,839	7,106	8,725	8,571	8,819	8,230	7,747	7,619	8,019	9,732	8,106	99,451
1991	8,767	6,715	7,378	7,334	9,162	7,589	7,070						

[1] Output of commercial bars .999 fine, including U.S. Mint purchases of crude. Production is from both foreign and domestic silver.
Sources: American Bureau of Metal Statistics; The Silver Institute, Inc. T.603

Highest and Lowest Prices of December Silver Futures at New York (Comex) In Dollars per Ounce

Year of Delivery		Yr. Prior to Delivery		Delivery Year												Life of Delivery Range
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1984	High	10.860	11.100	9.780	10.730	10.970	10.490	9.970	10.130	8.739	8.390	7.900	7.865	7.900	17.165	17.550
	Low	9.220	9.400	8.470	9.290	9.930	9.465	9.110	8.700	7.060	7.200	7.120	7.120	6.950	6.245	6.245
	Close	10.649	9.867	9.329	10.420	10.541	9.555	9.835	8.817	7.274	7.660	7.620	7.280	7.019	6.573	—
1985	High	8.745	7.850	6.930	6.850	7.250	7.200	7.015	6.740	6.615	6.630	6.320	6.530	6.318	6.120	12.300
	Low	7.700	6.800	6.300	5.930	5.900	6.440	6.180	6.200	5.990	6.230	5.960	6.075	6.040	5.700	5.700
	Close	7.736	6.860	6.832	6.059	7.106	6.480	6.392	6.309	6.460	6.370	6.095	6.125	6.077	5.865	—
1986	High	6.840	6.650	6.830	6.450	6.140	5.795	5.495	5.660	5.295	5.780	6.120	5.900	5.870	5.515	7.990
	Low	6.540	6.130	6.070	5.930	5.370	5.170	5.030	5.100	5.060	5.150	5.240	5.470	5.200	5.270	5.030
	Close	6.609	6.263	6.443	5.968	5.395	5.342	5.434	5.256	5.214	5.230	5.625	5.680	5.389	5.290	—
1987	High	6.210	5.850	6.030	5.880	6.675	10.148	9.900	8.370	8.585	9.100	8.240	8.620	7.330	7.060	10.148
	Low	5.520	5.580	5.670	5.635	5.695	6.490	7.600	6.850	7.390	7.370	7.370	6.700	6.240	6.560	5.435
	Close	5.717	5.714	5.791	5.707	6.466	8.320	7.920	7.555	8.511	7.530	7.610	6.990	7.037	6.713	—
1988	High	8.000	7.665	7.600	7.070	7.130	7.200	7.080	7.740	8.340	7.150	6.780	6.545	6.590	6.280	10.889
	Low	6.697	7.120	6.830	6.450	6.510	6.620	6.600	6.800	6.850	6.600	6.160	6.196	5.980	6.040	5.980
	Close	7.656	7.203	6.922	6.600	7.085	6.805	6.889	6.918	7.011	6.710	6.225	6.348	6.136	6.088	—
1989	High	7.210	6.850	6.800	6.545	6.700	6.335	6.040	5.780	5.625	5.500	5.430	5.375	5.890	5.740	8.860
	Low	6.570	6.540	6.250	6.250	6.140	5.925	5.320	5.300	5.250	5.160	5.110	5.080	5.171	5.220	5.080
	Close	6.756	6.598	6.287	6.324	6.211	5.951	5.420	5.366	5.431	5.165	5.310	5.218	5.668	5.240	—
1990	High	6.430	6.225	5.800	5.800	5.515	5.535	5.560	5.330	5.180	5.470	5.010	4.820	4.340	4.310	6.430
	Low	5.646	5.555	5.525	5.425	5.220	5.170	5.221	4.920	4.920	4.860	4.785	4.055	4.045	3.930	3.930
	Close	6.161	5.617	5.596	5.486	5.260	5.222	5.309	5.073	4.927	4.868	4.832	4.180	4.122	4.093	—
1991	High	4.660	4.520	4.604	4.120	4.420	4.320	4.320	4.790	4.630	4.190	4.325				
	Low	4.420	4.230	3.980	3.721	3.920	4.020	4.070	4.255	4.070	3.845	3.880				
	Close	4.478	4.496	4.080	3.939	4.031	4.133	4.237	4.553	4.147	3.870	4.173				
1992	High															
	Low															
	Close															

Source: Commodity Exchange of N.Y. (COMEX)

T.596

Average Total Open Interest of Silver Futures at New York (COMEX) In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1983	39,122	49,642	45,929	49,603	51,481	50,738	42,589	48,332	49,920	51,782	54,999	59,067
1984	62,135	64,640	68,763	72,204	65,424	62,890	61,644	63,700	63,655	66,339	78,744	78,492
1985	82,285	83,773	74,987	75,583	74,587	76,985	71,610	73,325	71,100	81,987	87,775	86,249
1986	82,915	81,670	75,891	79,653	74,781	72,411	67,063	74,916	79,376	81,192	93,567	88,962
1987	93,442	94,823	94,366	114,498	98,917	91,469	82,200	87,131	79,747	84,420	78,669	71,204
1988	76,788	79,031	68,994	66,187	69,137	83,428	84,517	82,793	82,369	85,261	92,026	90,081
1989	93,582	95,876	93,953	99,598	90,996	86,804	83,466	88,886	85,248	88,406	91,459	93,606
1990	94,397	93,713	96,182	96,701	95,784	103,575	99,098	99,668	92,436	91,093	84,181	80,364
1991	91,685	101,352	99,564	99,791	94,921	105,646	97,554	95,536	87,079			
1992												

Source: Commodity Exchange of N.Y. (COMEX)

T.601

Volume of Trading in Silver Futures at New York (COMEX) In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	502.7	601.4	446.6	452.9	516.1	623.7	454.3	656.5	492.0	569.0	596.9	512.7	6,433
1984	570.8	698.8	695.7	629.9	626.7	587.4	554.7	601.5	431.3	449.2	534.2	362.3	6,698
1985	531.8	488.0	518.4	449.8	424.8	377.9	377.7	388.5	267.7	314.0	332.8	349.9	4,821
1986	394.0	368.9	277.6	438.8	280.1	336.1	187.9	317.8	454.6	286.7	338.9	168.2	3,850
1987	247.3	248.0	343.2	932.7	438.6	486.4	378.7	502.7	390.3	468.1	355.9	263.7	5,056
1988	274.1	301.1	348.9	313.9	341.1	726.9	638.9	411.7	299.9	268.4	475.4	264.4	4,665
1989	317.2	408.5	447.3	354.2	278.5	484.7	272.3	360.4	224.9	261.1	622.1	345.4	4,377
1990	343.2	413.3	210.2	364.1	328.8	433.8	242.3	524.8	201.3	308.4	323.7	219.8	3,914
1991	309.8	420.1	446.5	395.6	249.1	547.5	344.7	320.6	268.7	253.0	341.6	242.1	4,139

Source: Commodity Exchange of N.Y. (COMEX)

T.602

Soybean Meal

Soybean meal is a high-protein feed used in formulating rations for livestock and poultry. Global 1991/91 soymeal production was forecast to rise slightly to just over 70 million tonnes. Among the protein meals, soymeal is the most widely produced, comprising about 60 percent of the world total. The U.S. is the top producer, followed by Brazil, Argentina and the EC.

World consumption of soymeal in 1991/92 was expected to reach a record 71.7 million tonnes. U.S. consumption was put at just over 21 million tonnes, while EC use was projected to fall slightly to over 20.1 million. Brazil and Argentina are major producers and processors of soybeans, but their domestic consumption is relatively small. Brazil was expected to utilize about 3.2 million tonnes of meal, and Argentina was to consume 200,000 tonnes. The Soviets, having emerged as large importers of U.S. soymeal, were slated to use 3.6 million tonnes. The former USSR needed soymeal to formulate more efficient livestock rations. Another region using more meal was the Pacific Rim, namely South Korea, Taiwan and Japan.

World soymeal trade in 1991/92 was expected to contract slightly, due to reduced exportable supplies in Brazil and Argentina. Global exports were forecast at just under 26 million tonnes. Brazil remained the largest shipper, exporting a projected 7.5 million tonnes, or 9 percent less than a year earlier. Argentine exports were expected to decline about 3 percent to 5.4 million tonnes. The EC was a net importer. Major importing countries were France, Germany, Italy, the former USSR, and the Eastern European nations. World ending stocks of soymeal were forecast to decline almost 20 percent to just over 3 million tonnes.

U.S. soymeal production in 1991/92 was slated to rise 3 percent to 29.3 million tons. Exports to the Soviets and good U.S. demand spurred the increase. Stocks at the beginning of the season were 285,000 tons, 10 percent less than the year before.

Domestic use of meal was estimated at a record 23.2 million tons, slightly more than a year earlier. Profitable margins in poultry and hog production accounted for the increase in consumption. U.S. soymeal exports were projected to be 6 million tons, or 15 percent more than the year before. A smaller crop in Brazil meant reduced exports from that competitor, and Argentina shipped less meal. A positive market influence was the U.S. extension of export credits to the former USSR; the financing was used for grain and soymeal purchases. The major buyers of U.S. soymeal were the former USSR, Canada, Venezuela, Algeria and Mexico.

With increases in exports and domestic consumption, total use of soymeal in the U.S. was projected to reach a record 29.3 million tons, or 3 percent more than the previous season. Domestic ending stocks in 1991/92 were forecast at 300,000 tons, 5 percent higher than a year earlier.

Futures Markets

Soybean meal futures and options are traded on the Chicago Board of Trade.

World Soybean Meal Supply & Distribution In Thousands of Metric Tons

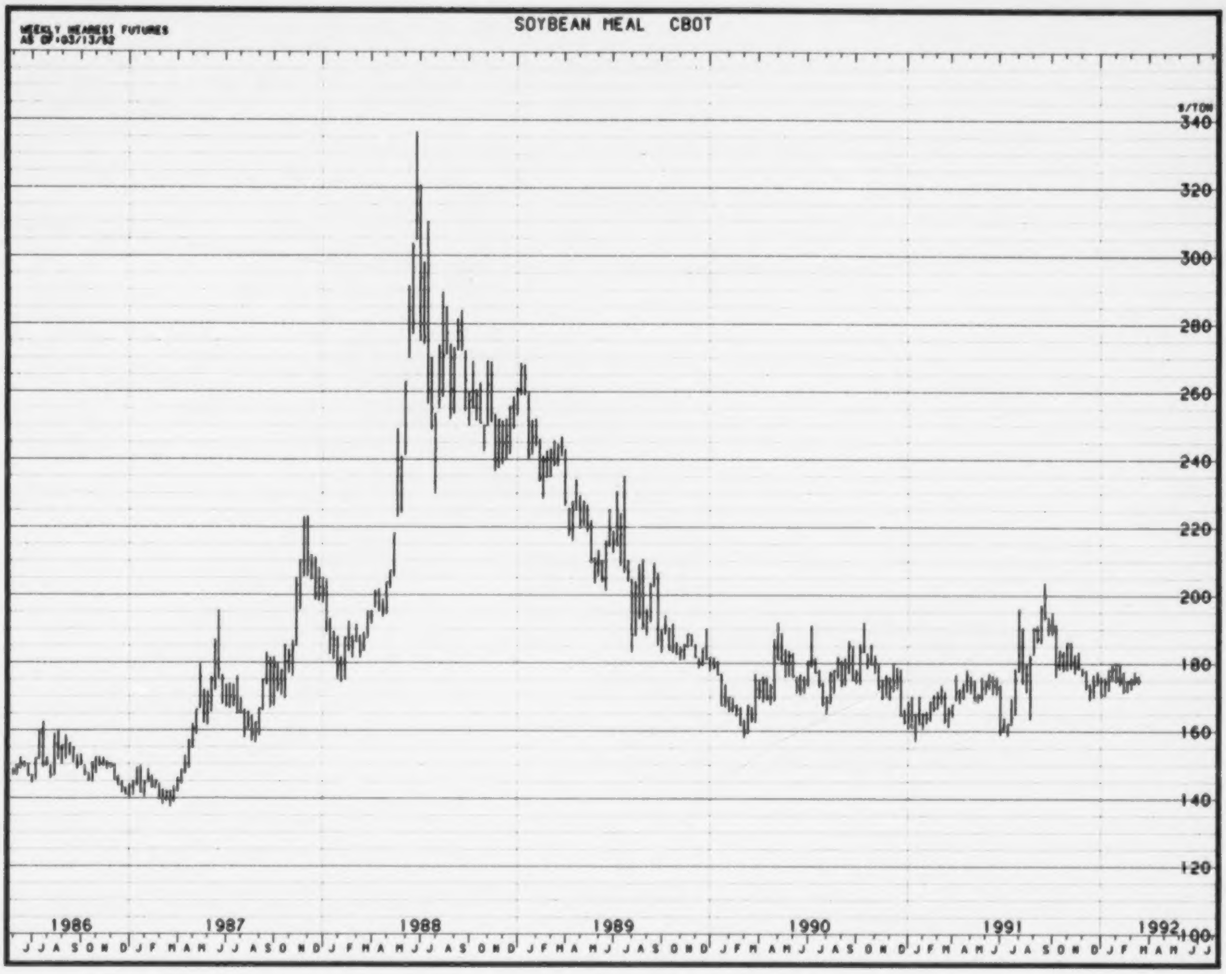
Year Begin Oct. 1	Production					Exports			Imports		Consumption			Stocks		
	Brazil	China	EC-12	United States	Total	Brazil	United States	Total	France	Total	EC-12	United States	Total	Brazil	United States	Total
1985–6	9,690	2,190	10,220	22,635	61,060	7,380	5,476	23,140	3,670	23,950	18,730	17,318	61,790	610	192	2,860
1986–7	11,280	3,000	10,740	25,182	67,210	8,370	6,617	25,940	3,660	26,630	19,240	18,539	67,680	520	218	3,070
1987–8	10,130	3,980	10,400	25,460	67,555	7,350	6,191	24,560	3,110	25,310	18,930	19,344	67,660	970	140	3,720
1988–9	11,360	3,570	9,100	22,630	63,900	8,680	4,781	24,820	2,910	26,320	17,860	17,833	65,890	790	160	3,220
1989–90	12,350	3,020	10,600	25,150	69,710	9,430	4,560	25,710	3,480	26,030	19,860	20,462	69,190	1,140	290	4,060
1990–1[1]	10,950	3,430	9,750	25,530	68,780	8,480	4,720	26,390	3,700	26,930	20,120	20,760	70,020	910	360	3,350
1991–2[2]	10,560	3,570	9,760	25,760	69,160	7,600	4,990	25,810	3,600	26,620	19,900	20,870	70,300	960	270	3,020

[1] Preliminary. [2] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.607a

Supply and Distribution of Soybean Meal in the United States In Thousands of Short Tons

Year Begin. Oct. 1	Supply			Distribution			$ Ton Decatur 44% Solvent	$ Tonne		
	For Stocks Oct. 1	Production	Total Supply	Domestic Feed[2]	Exports	Total		Decatur 44% Solvent	Brazil FOB 45–46% Protein	Rotterdam CIF
1985–6	387	24,951	25,338	19,090	6,036	25,126	154.90	171	175	183
1986–7	212	27,758	27,970	20,387	7,343	27,730	162.70	179	179	191
1987–8	240	28,060	28,300	21,293	6,854	28,147	221.90	245	239	254
1988–9	153	24,943	25,100	19,639	5,270	24,927	233.00	257	239	259
1989–90	173	27,719	27,900	22,500	5,024	27,500	173.50	191	181	204
1990–1[1]	318	28,142	28,480	22,800	5,200	28,080	170.00	185	177	197
1991–2[3]	400	29,045	29,450	23,250	5,850	29,100	175.00			

[1] Preliminary. [2] Includes small quantities used for industrial purposes, estimated at 30,000 tons annually. [3] Estimate.
Source: Economic Research Service, U.S.D.A. T.606



Stocks (at Oil Mills) of Soybean Cake & Meal in the United States In Thousands of Short Tons

Year	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	April 1	May 1	June 1	July 1	Aug. 1	Sept. 1
1976–7	354.9	423.5	427.7	353.9	384.7	429.9	412.6	449.0	408.3	390.7	399.0	270.4
1977–8	228.3	270.0	239.8	245.1	251.7	239.7	227.3	308.2	263.3	191.1	262.6	234.1
1978–9	242.9	210.4	178.2	260.5	215.1	198.4	210.4	231.6	207.4	205.3	232.2	140.3
1979–0	224.3	204.1	164.2	207.7	158.7	160.6	219.1	193.9	265.0	262.0	232.4	225.1
1980–1	189.7	211.1	350.0	221.8	209.7	214.4	232.2	184.4	254.0	209.7	156.1	199.7
1981–2	233.8	309.2	314.8	279.4	315.7	324.9	190.3	172.1	309.3	224.9	209.1	189.7
1982–3	175.2	342.8	349.6	332.3	400.2	422.8	341.0	356.1	341.5	272.3	365.2	378.5
1983–4	474.1	419.3	466.8	391.1	475.8	446.7	460.7	418.6	427.2	391.2	355.5	242.7
1984–5	255.4	236.1	285.7	336.8	319.6	334.1	444.6	429.8	495.8	569.6	562.5	458.0
1985–6	386.9	318.4	369.2	358.4	372.4	281.3	386.6	300.8	282.4	278.7	250.6	298.3
1986–7	211.7	218.0	387.3	240.3	311.2	277.5	235.8	244.0	321.7	261.3	292.9	301.3
1987–8	240.2	267.6	311.8	296.2	390.4	304.9	243.7	299.5	255.6	294.4	437.4	264.6
1988–9	153.5	267.8	295.6	353.6	442.3	395.7	237.9	296.8	260.4	218.0	264.9	152.0
1989–90	172.9	220.5	194.3	328.2	254.0	262.0	311.8	307.7	252.6	262.5	267.7	232.0
1990–1[1]	———	455.8	———	———	527.7	———	———	382.7	———	———	247.4	———

[1] Preliminary. *Sources: Economic Research Service, U.S.D.A.; Bureau of the Census*

T.613

SOYBEAN MEAL

U.S. Exports of Soybean Cake & Meal by Country of Destination In Thousands of Metric Tons

Yr. Beg. Oct. 1	Egypt	Venezuela	Canada	Mexico	France	West Germany	Spain	Ireland	Italy	Netherlands	Philippines	Poland	United Kingdom	USSR	Yugoslavia	Total
1984–5	87.0	686.5	489.9	105.8	0	195.9	73.5	16.2	499.0	905.0	195.6	117.2	56.2	0	51.3	4,457
1985–6	200.0	566.8	607.3	81.5	15.0	576.0	74.5	4.7	658.2	1,221	164.0	0	59.7	0	128.8	5,476
1986–7	274.9	628.1	628.1	102.5	53.7	803.5	189.5	40.6	979.7	926.4	124.8	—	73.4	0	124.7	6,661
1987–8	182.0	680.4	680.4	184.0	33.3	177.3	71.2	32.4	554.7	559.9	93.0	26.9	41.6	1,303	88.6	6,191
1988–9	145.4	529.2	529.2	285.3	0	0	47.7	5.7	243.5	216.0	61.5	0	32.1	1,312	59.3	4,781
1989–90[1]	203.8	314.9	561.1	318.8	0	0		1.9	102.3	22.0	122.5		12.7	1,405	41.0	4,558

[1] Preliminary. *Source: Bureau of the Census, U.S. Dept. of Commerce* T.607

Average Price of Soybean Meal[1] (44% Solvent) at Decatur In Dollars per Short Ton (Bulk)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	135.25	125.20	125.90	117.90	111.50	110.25	144.00	121.40	130.60	138.30	142.50	145.00	126.43
1986	153.25	152.25	163.70	157.00	157.90	158.90	161.00	163.50	165.20	151.90	154.00	149.60	157.35
1987	146.80	154.40	146.60	159.00	174.90	185.80	181.25	169.90	177.20	185.50	206.60	214.80	175.23
1988	193.75	183.00	191.80	200.40	223.50	287.80	255.60	255.10	264.90	259.75	248.20	246.00	234.15
1989	249.00	234.10	237.10	220.75	214.70	227.50	231.50	215.50	217.10	191.60	183.40	179.40	216.80
1990	172.30	161.90	165.10	165.40	176.20	169.10	171.32	172.40	176.90	172.50	163.00	164.80	169.24
1991	155.00	163.50	165.75	171.50	171.00	171.10	169.70	177.60	191.90	183.00	178.00	170.70	172.39
1992	172.70												

Source: Consumer Marketing Service, U.S.D.A. T.608

Production of Soybean Cake & Meal in the U.S. In Thousands of Short Tons

Crop Year	Production													Yield of Meal From Soybeans in lbs.
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total	
1984–5	2,108	2,326	2,381	2,226	1,887	2,024	1,958	2,101	1,953	1,934	1,832	1,802	24,530	47.15
1985–6	2,218	2,288	2,380	2,344	1,925	2,160	2,008	2,037	1,879	1,977	1,863	1,872	24,951	47.27
1986–7	2,521	2,563	2,527	2,590	2,410	2,489	2,256	2,246	2,135	2,185	1,949	1,888	27,759	47.08
1987–8	2,439	2,668	2,649	2,554	2,377	2,573	2,450	2,340	2,129	2,110	1,873	1,898	28,060	47.76
1988–9	2,236	2,399	2,390	2,360	2,036	2,219	2,127	2,061	1,803	1,749	1,804	1,759	24,943	47.43
1989–90	2,246	2,493	2,520	2,549	2,171	2,432	2,264	2,224	2,183	2,197	2,237	2,187	27,702	47.55
1990–1[1]	—	7,544	—	—	7,168	—	—	6,641	—	—	7,149	—	28,441	47.24

[1] Preliminary. *Sources: Economic Research Service, U.S.D.A.; Bureau of Census.* T.609

Average Open Interest of Soybean Meal Futures at the Chicago Board of Trade In Contracts

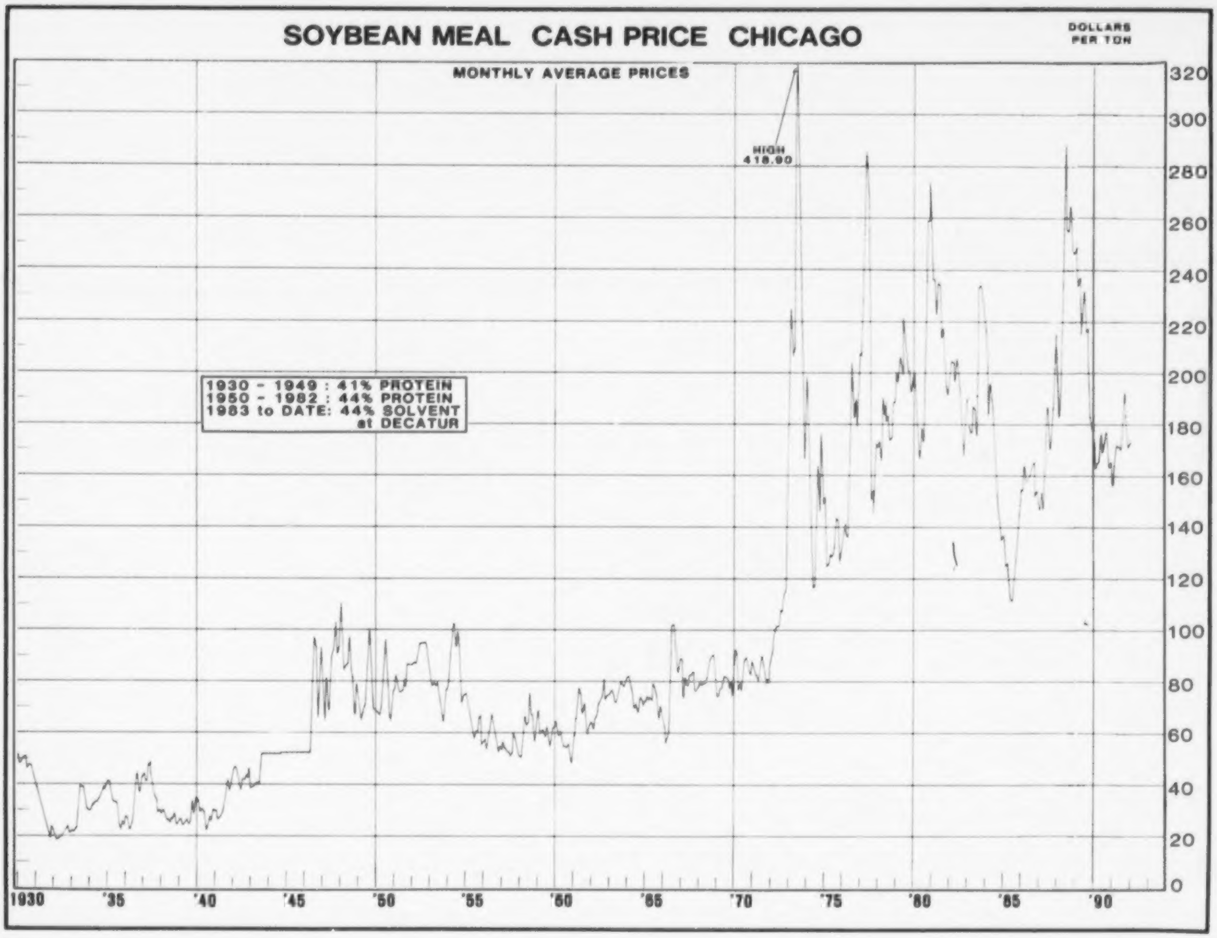
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1985	36,754	41,844	43,041	47,011	52,021	51,558	46,193	41,474	44,860	42,197	43,873	43,816
1986	45,678	44,891	49,707	50,860	47,143	52,244	52,615	47,319	51,713	50,974	58,744	58,397
1987	60,584	67,643	65,842	67,193	65,323	66,752	52,442	48,901	52,914	65,831	74,924	75,468
1988	65,643	63,960	61,100	66,950	73,264	80,444	71,643	76,295	80,753	75,439	77,466	71,443
1989	71,792	71,599	67,542	58,923	58,794	64,212	59,547	60,925	59,271	60,038	63,552	57,219
1990	60,010	71,773	74,762	76,897	77,307	69,658	63,824	62,033	58,915	68,888	76,899	70,901
1991	62,172	60,017	56,179	59,107	49,973	57,068	55,629	54,342	67,765	68,627	68,263	71,900

Source: Chicago Board of Trade T.610

Volume of Trading of Soybean Meal Futures at the Chicago Board of Trade In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	252.1	232.6	244.5	283.9	285.0	277.3	420.9	250.7	268.5	287.5	292.3	243.9	3,339
1986	260.2	252.9	218.2	289.3	260.6	242.1	292.5	274.6	222.7	292.3	209.3	234.8	3,049
1987	260.4	211.6	222.6	305.3	353.3	430.1	307.8	247.1	334.7	388.7	385.5	350.9	3,798
1988	393.7	371.5	350.4	396.3	497.3	584.3	482.0	427.7	449.6	446.3	533.1	424.0	5,313
1989	408.1	320.7	382.4	388.8	406.7	403.8	410.7	393.1	382.8	364.8	330.1	294.8	4,487
1990	308.6	276.4	400.2	428.4	421.0	398.3	460.2	435.3	401.6	476.3	448.7	448.5	4,904
1991	323.4	281.8	310.3	429.3	296.8	412.5	484.3	463.6	394.7	410.8	351.6	339.6	4,498
1992	368.7	290.5											

Source: Chicago Board of Trade T.611



High, Low & Closing Prices of May Soybean Meal Futures on the Chicago Board of Trade $ per Ton

Year of Delivery		Year Prior to Delivery										Delivery Year					Life of Delivery Range
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1987	High	—	165.5	169.7	154.0	158.5	155.4	157.1	155.5	151.8	149.0	145.8	143.3	143.5	161.9	179.5	179.5
	Low	—	149.7	152.0	146.5	143.0	148.0	152.1	148.7	148.6	141.5	139.2	135.6	135.8	143.6	158.8	135.6
	Close	—	165.2	153.2	146.5	154.7	155.3	155.0	151.8	149.0	145.5	140.0	136.9	143.1	160.9	168.0	—
1988	High	—	163.5	188.0	199.0	170.0	156.5	167.5	171.0	195.5	196.5	189.5	191.9	195.2	203.7	249.0	249.0
	Low	—	155.0	162.0	168.0	157.0	148.0	154.0	157.2	163.3	177.0	175.5	174.5	179.8	193.5	202.0	148.0
	Close	—	163.5	173.0	169.5	160.2	152.9	163.7	167.2	192.2	185.2	178.1	188.6	193.8	203.5	246.5	—
1989	High	204.5	215.5	241.7	304.0	280.0	260.0	274.0	258.0	262.0	264.0	267.0	249.2	246.7	234.0	227.7	304.0
	Low	200.5	204.0	209.5	239.0	221.5	236.0	245.5	239.0	232.5	236.5	239.0	225.7	226.5	216.0	209.5	200.5
	Close	203.5	214.2	241.7	275.0	233.2	254.0	249.7	247.5	245.7	263.5	247.9	237.7	227.5	221.6	210.2	—
1990	High	223.0	221.7	218.5	200.5	214.5	189.0	188.5	185.3	186.0	185.2	181.8	173.0	176.8	187.0	192.0	223.0
	Low	215.0	209.0	182.5	183.5	181.1	179.0	176.5	174.5	178.5	178.2	169.8	163.8	163.0	167.7	175.8	163.0
	Close	215.0	209.5	184.5	193.0	181.3	184.7	179.5	179.0	184.3	181.4	171.1	166.1	171.7	184.1	178.6	—
1991	High	197.0	204.0	208.0	196.0	205.2	194.0	195.7	198.0	190.5	170.5	178.4	175.2	176.5	178.0	175.0	208.0
	Low	188.0	188.5	192.0	184.5	177.5	175.8	185.5	185.8	179.0	171.8	165.5	166.6	164.0	168.2	168.4	164.0
	Close	194.0	203.0	194.0	196.0	179.5	186.3	189.5	187.4	183.1	173.6	168.3	171.3	167.7	173.1	169.6	—
1992	High	185.0	191.0	189.5	185.0	188.0	194.0	191.5	191.50	186.50	179.40	175.30					
	Low	181.0	184.0	178.5	168.0	164.5	164.5	179.6	179.60	170.70	172.30	167.80					
	Close	183.0	189.5	181.5	168.7	182.0	183.7	184.3	184.30	177.10	173.70	172.20					

Source: Chicago Board of Trade

T.612

Soybean Oil

Worldwide soybean oil production in 1991/92 was forecast to rise slightly to 16 million tonnes. Of the major vegetable oils, soyoil has the largest share of world production at nearly 27 percent. The U.S. accounted for almost 39 percent of total output, while combined Brazilian and Argentine production comprised 23 percent. The EC's production share was close to 14 percent.

Global soyoil consumption was pegged at 16 million tonnes, up slightly from a year earlier. Soyoil use has trended higher because of population growth, rising incomes and improved diets. Some of the newest markets are Asian countries with rapidly growing populations and improving standards of living. At the same time, however, soyoil has faced increased competition from lower-priced palm oil and rapeseed oil. In low-income countries where price is a determining factor, palm oil maintains a distinct advantage. In developed countries, oils with lower levels of saturated fats like canola and sunseed oil have some advantages over soyoil.

World trade in soyoil was projected to decline 3 percent in 1991/92 to 3.5 million tonnes. Soyoil remained the second most widely traded oil, following palm. Palm oil exports were expected to increase, cutting into soyoil's export market share. Shipments by Argentina and Brazil were due to fall during the season, while the U.S. and the EC were expected to export more. Brazil, with a larger soybean crop, was to ship about 450,000 tonnes, down from 690,000 the previous season. Brazil has been a soymeal exporter, keeping most of its soyoil for domestic consumption. Argentina was likely to export 1 million tonnes of soyoil in 1991/92. Among the major importers were China, Iran and the Soviet Commonwealth.

World ending stocks of soyoil were forecast at 2 million tonnes, some 16 percent above the 1990/91 level and held mostly be the U.S., Brazil, Argentina and the EC.

U.S. soyoil production in 1991/92 was put at almost 14 billion pounds, over 3 percent more than the previous year. Stocks at the beginning of season were large at 1.8 billion pounds, 35 percent higher than the year before. Total supplies of soyoil were 15.6 billion pounds, up 6 percent.

Domestic use of soyoil was projected to be 12.3 billion pounds, about the same as a year earlier. The sluggish rate of U.S. economic growth appeared to dampen soyoil use, yet consumption of oils like corn, cottonseed, sunseed and canola increased.

U.S. soyoil exports were pegged at 1.2 billion pounds, about 45 percent more than the prior year. Exports had been depressed the previous year, because of strong competition from South America and a political dispute with Pakistan. In 1991/92, China and the Soviet Commonwealth purchased U.S. soyoil under the Export Enhancement Program, which subsidizes sales. Other countries targeted for EEP vegetable oil sales included Algeria, Tunisia, Morocco, Turkey and Ecuador.

Domestic ending stocks of soyoil were to increase by over 30 percent to 2.3 billion pounds.

Futures Markets

Soybean oil futures and options are traded on the Chicago Board of Trade.

World Supply & Demand of Soybean Oil In Thousands of Metric Tons

Year Begin Oct. 1	Production				Exports			Imports		Consumption					Stocks[3]	
	Brazil	EC-12	United States	Total	Brazil	United States	Total	India	Total	Brazil	EC-12	India	United States	Total	United States	Total
1985–6	2,350	2,250	5,269	13,850	450	570	3,150	260	3,090	1,940	1,380	470	4,560	13,500	430	1,650
1986–7	2,730	2,360	5,798	15,200	950	538	3,900	360	3,790	1,930	1,460	450	4,915	14,760	782	1,990
1987–8	2,440	2,280	5,890	15,240	610	850	3,800	420	3,770	1,930	1,560	620	4,960	15,110	950	2,090
1988–9	2,740	2,010	5,320	14,560	700	750	3,810	30	3,690	2,140	1,510	410	4,800	14,870	780	1,660
1989–90	2,980	2,350	5,900	15,940	870	610	4,000	30	3,740	2,000	1,530	320	5,480	15,610	590	1,720
1990–1[1]	2,620	2,170	6,010	15,650	700	320	3,540	20	3,560	2,100	1,540	410	5,440	15,620	590	1,850
1991–2[2]	2,530	2,180	6,040	15,770	450	410	3,420	20	3,490	2,140	1,520	410	5,490	15,620	850	2,040

[1] Preliminary. [2] Forecast. [3] End of season. *Source: Foreign Agricultural Service, U.S.D.A.* T168b

Supply & Distribution of Soybean Oil in the U.S. In Millions of Pounds

Year Begin. Oct. 1	Production	Imports	Stocks Oct. 1	Exports & Shipments	Domestic Disappearance										
						Food					Non-Food				
					Total Domestic	Shortening	Margarine	Cooking & Salad Oils	Other Edible	Total Food	Paint & Varnish	Resins & Plastics	Fatty Acids	Total Non-Food	Total Disappearance
1985–6	11,617	9	632	1,257	10,053	3,440	1,735	4,686	138	10,004	60	99	32	280	11,310
1986–7	12,783	15	947	1,187	10,833	3,359	1,161	5,054	138	10,213	63	109	33	300	12,020
1987–8	12,974	194	1,725	1,873	10,930	3,627	1,629	5,043	130	10,429	54	106		285	12,803
1988–9	11,737	137	2,092	1,661	10,591	3,419	1,537	4,497	137	9,636	35	124		282	12,252
1989–90	13,004	22	1,715	1,353	12,083	3,934	1,754	4,726	124	10,537					13,436
1990–1[1]	13,250	20	1,305	700	12,000										12,700
1991–2[2]	13,720		1,870	1,000	12,200										13,200

[1] Preliminary. [2] Forecast. *Source: Economic Research Service, U.S.D.A.* T.623

Salient Statistics of Soybean Oil in the U.S. In Millions of Pounds

Crop Year Begin. Oct.	Production		Consumption		Stocks Sept.30		Imports for Consumption	Exports		$ Tonne	
	Crude	Refined	In Refining	In End Pdt's.	Crude	Refined		Crude	Refined	Rotter. Dutch F.O.B.	Brazil FOB Bulk
1982–3	12,040	9,714	10,075	9,485	959.4	301.6	66.8	1,725	17.0	463	444
1983–4	10,872	9,475	9,827	9,477	435.5	285.0	0	1,398	22.9	722	685
1984–5	11,470	9,937	10,284	10,515	341.3	291.2	20.4	1,255	16.4	625	609
1985–6	11,617	9,719	10,088	10,283	652.6	294.0	7.7	833.3	32.8	377	342
1986–7	12,798	10,400	10,751	10,512	1,451	274.0	1.1	903.0	38.8	324	302
1987–8	12,975	10,771	11,120	10,715	1,834	258.3		1,626	9.4	443	400
1988–9	11,737	9,805	10,115	9,918	1,455	260.0				435	407
1989–90	13,004	10,770	11,112	10,808	—— 1,305 ——					438	421
1990–1[1]										455	418

[1] Preliminary. *Source: Bureau of the Census*

T.614

U.S. Exports of Soybean Oil,[1] by Country of Destination In Thousands of Metric Tons

Yr. Beg. Oct. 1	Australia	Colombia	Canada	Venezuela	Ecuador	Ethiopia	Haiti	Peru	India	Israel	Mexico	Morocco	Pakistan	Panama	Egypt	Grand Total
1980–1	16.5	60.3	7.8		38.6		22.4	41.2	61.8	5.2	21.6	5.0	125.7	14.7	3.4	740
1981–2	22.6	77.4	5.4	42.7	36.2		8.8	46.8	68.4	.3	91.1	9.7	259.9	21.7	6.9	942
1982–3	5.0	69.5	7.5	55.9	50.4		20.4	70.2	54.9	.4	16.3	9.0	236.7	16.4	3.5	918
1983–4	.3	24.8	9.8	50.5	41.1		12.5	24.9	169.4	.5	68.1	2.5	216.1	15.7	3.6	827
1984–5	.2	22.2	12.9	51.9	44.7	24.0	16.1	11.4	62.8	.9	45.4	3.8	168.4	8.0	3.9	753
1985–6	.2	8.9	6.1	17.1	16.7	17.3	9.5	1.6	37.6	.6	49.1	3.2	274.9	2.8	4.9	570
1986–7	.4	.5	6.9	18.7	18.8	.6	15.3	1.3	47.1	.6	21.9	59.5	146.7	3.0	1.9	538.5
1987–8	—	.3	7.3	4.9	19.1	17.6	3.4	1.1	151.6	.4	11.5	35.8	396.7	3.7	.7	850.0
1988–9	.1	.2	5.4	29.1	30.9	9.0	2.8	2.8	28.1		17.7	80.0	453.1	6.7		753.6
1989–90	.1	.1	5.4	8.2	23.0	23.0	1.6	3.1	14.0		4.4	50.4	271.8	3.1		613.9
1991–2[2]	.5	3.2	2.7	0	19.3	19.3	4.7	4.1	12.5		2.7	35.4	66.2	4.1		

[1] Crude & refined oil combined as such. [2] Preliminary. *Source: The Bureau of the Census, U.S. Dept. of Commerce.*

T.615

U.S. Production of Crude Soybean Oil In Millions of Pounds

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1980–1	1,080	1,078	1,024	1,011	887.8	991.3	954.2	914.9	830.7	815.8	827.2	855.6	11,270
1981–2	1,125	1,018	1,070	995.6	917.7	912.1	866.8	930.2	828.4	765.6	732.0	818.3	10,979
1982–3	1,079	1,145	1,191	1,167	997.0	1,015	881.3	908.9	891.3	888.0	930.2	945.3	12,040
1983–4	1,081	957.7	990.9	1,053	896.9	972.7	846.7	906.3	803.5	788.8	819.4	755.9	10,872
1984–5	995.5	1,072	1,096	1,027	879.0	946.0	917.6	983.3	918.9	912.6	868.8	853.4	11,468
1985–6	1,040	1,053	1,096	1,086	894.8	1,005	935.4	953.3	881.9	909.5	875.3	886.7	11,617
1986–7	1,163	1,172	1,152	1,186	1,110	1,149	1,047	1,038	980.9	1,014	891.3	881.4	12,783
1987–8	1,120	1,207	1,208	1,170	1,092	1,187	1,133	1,087	996.4	994.2	878.6	901.3	12,974
1988–9	1,047	1,109	1,110	1,106	952.3	1,041	1,010	977.4	856.1	835.9	855.0	843.0	11,737
1989–90[1]	1,057	1,146	1,161	1,187	1,022	1,142	1,067	1,050	1,036	1,038	1,059	1,038	13,004
1990–1[1]	—— 3,494 ——			—— 3,331 ——			—— 3,171 ——						

[1] Preliminary. *Source: Bureau of the Census*

T.618

U.S. Production of Refined Soybean Oil In Millions of Pounds

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1980–1	784.1	760.5	763.1	741.6	706.3	833.9	741.2	754.9	812.9	765.4	813.3	812.1	9,289
1981–2	833.6	840.9	805.2	768.7	767.6	866.4	754.5	817.3	866.3	775.4	811.7	794.0	9,702
1982–3	824.6	827.8	795.1	784.1	727.1	841.8	800.9	843.1	824.0	778.7	837.7	828.8	9,714
1983–4	839.2	747.2	737.1	797.9	813.2	841.8	763.8	859.5	794.6	767.9	752.2	760.9	9,475
1984–5	907.6	835.5	821.2	838.7	796.1	835.5	865.0	899.5	773.1	763.9	806.2	794.4	9,937
1985–6	865.7	834.8	790.0	804.2	751.1	819.5	783.0	808.5	816.8	780.2	830.1	834.8	9,719
1986–7	911.3	848.1	850.0	790.2	763.6	900.7	871.2	826.9	871.3	921.8	898.6	946.5	10,400
1987–8	975.5	925.8	902.5	880.3	843.4	925.6	843.5	894.1	890.1	947.4	903.6	838.7	10,771
1988–9	867.1	826.9	800.8	776.7	709.6	830.1	800.6	867.4	801.4	791.4	866.6	866.6	9,805
1989–90[1]	936.8	912.0	873.9	887.8	800.6	800.6	812.7	952.8	915.1	903.7	931.1	935.7	10,745
1990–1[1]	1,028	980.6	934.7	—— 2,717 ——			—— 2,815 ——						

[1] Preliminary. *Source: Bureau of the Census*

T.617

SOYBEAN OIL

Soybean Oil Consumption in End Products in the U.S. In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	698.7	680.7	775.1	722.3	728.7	774.0	741.1	755.1	796.4	796.8	783.6	749.3	9,002
1982	740.0	737.7	809.6	715.2	761.0	834.6	775.2	811.9	820.5	799.9	763.1	733.2	9,302
1983	761.6	702.2	827.3	765.9	814.9	830.3	745.1	847.0	894.3	812.7	711.4	705.2	9,418
1984	827.6	821.7	837.8	781.1	857.4	824.4	744.7	772.2	780.6	932.0	883.4	856.1	9,919
1985	989.0	804.0	867.1	885.9	940.8	810.5	825.9	856.1	863.7	922.4	864.2	851.6	10,481
1986	836.7	794.0	889.7	849.1	850.3	856.8	835.1	843.1	890.3	927.6	840.6	891.2	10,305
1987	800.9	799.4	862.0	869.6	824.4	918.9	932.7	902.9	949.6	961.4	876.0	891.5	10,589
1988	913.9	820.5	930.0	839.9	870.5	937.9	936.5	907.3	829.1	862.2	829.1	846.6	10,524
1989	780.8	729.5	834.7	800.8	851.9	854.2	774.7	876.9	876.2	923.2	889.7	887.0	10,080
1990	901.3	815.7	952.0	893.6	950.9	927.8	866.0	905.4	895.7	984.1	912.9	878.0	10,883
1991[1]		2,690			2,831			2,722					

[1] Preliminary. *Source: Bureau of the Census* T.624

U.S. Exports of Soybean Oil (Crude & Refined) In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1981	116.0	113.8	202.8	76.1	109.6	108.8	93.1	291.7	97.9	187.2	146.6	184.3	1,698
1982	43.9	176.7	126.5	148.5	103.3	208.0	270.2	237.4	244.1	181.1	174.9	142.0	2,057
1983	124.0	225.9	90.4	305.7	127.5	94.1	208.9	125.1	225.1	55.1	54.7	95.5	1,732
1984	161.3	289.9	258.9	163.3	208.3	157.3	140.0	73.0	156.3	200.3	214.6	189.6	2,068
1985	66.7	198.3	184.9	66.9	52.4	138.8	174.4	70.1	102.8	125.4	38.1	74.3	923.3
1986	80.6	100.7	92.8	124.0	50.7	115.1	44.6	187.7	223.4	118.2	27.4	22.8	1,188
1987	67.9	74.0	52.1	28.2	47.4	85.0	175.6	261.0	224.8	100.1	139.0	134.0	1,389
1988	25.7	281.0	279.4	87.7	138.6	269.0	157.2	78.1	183.2	200.1	110.6	119.9	1,931
1989	104.5	65.8	112.4	105.5	161.4	72.1	159.3	181.1	265.6	123.9	82.5	113.4	1,548
1990	95.4	136.2	164.4	33.0	112.1	161.9	122.6	82.5	298.7	85.4	43.9	76.5	1,413
1991[1]		21.1			88.6			364.0					

[1] Preliminary. *Source: Dept. of Commerce* T.619

U.S. Stocks of Soybean Oil (Crude & Refined) at Factory & Warehouses In Millions of Pounds

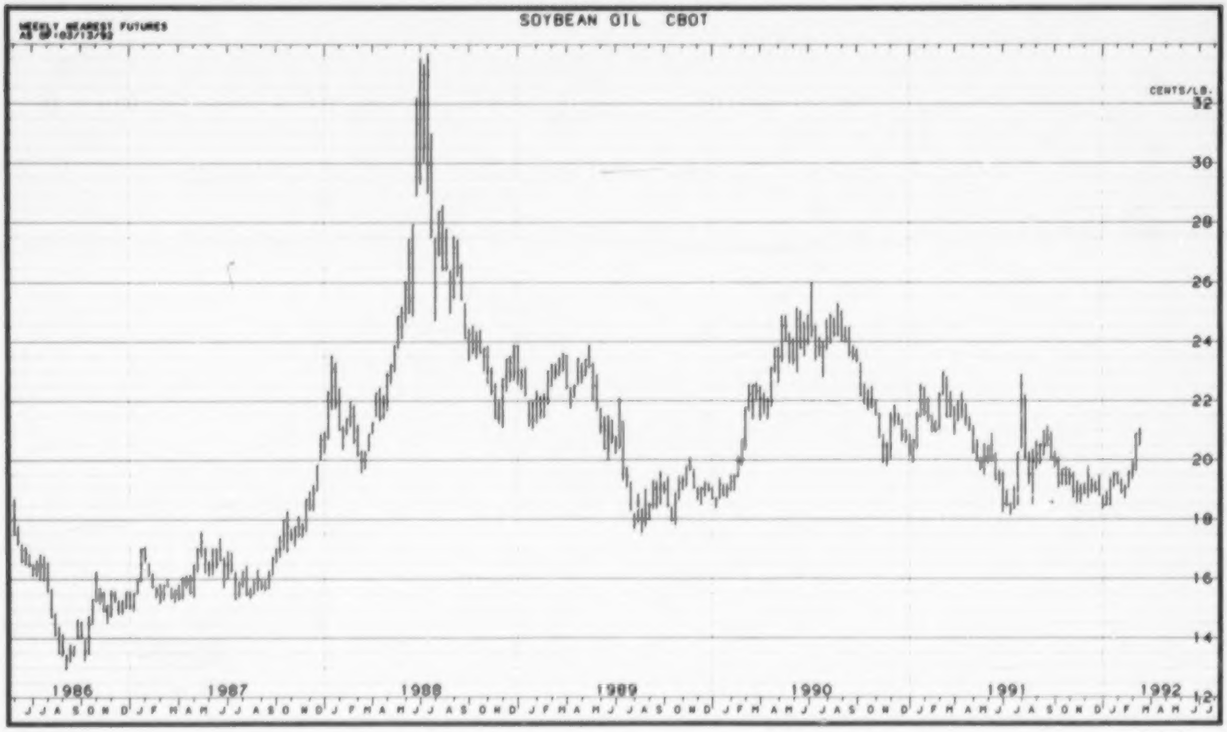
Year	Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	April 1	May 1	June 1	July 1	Aug. 1	Sept. 1
1981–2	1,736	1,790	1,884	2,024	2,160	2,141	2,141	2,112	2,018	1,889	1,647	1,398
1982–3	1,103	1,208	1,305	1,587	1,713	1,700	1,842	1,600	1,552	1,546	1,411	1,408
1983–4	1,261	1,453	1,661	1,919	1,907	1,583	1,520	1,380	1,203	1,012	989.6	871.0
1984–5	720.5	597.2	580.1	777.1	883.6	723.9	715.6	666.0	706.7	731.9	724.2	715.7
1985–6	632.4	636.1	810.4	969.4	1,167	1,181	1,247	1,219	1,360	1,225	1,321	1,152
1986–7	946.6	963.6	1,269	1,507	1,837	2,017	2,352	2,344	2,416	2,339	2,184	1,979
1987–8	1,725	1,661	1,834	2,050	2,391	2,239	2,343	2,385	2,570	2,361	2,203	2,212
1988–9	2,092	2,046	2,303	2,540	2,703	2,902	2,893	2,759	2,743	2,683	2,427	2,070
1989–90	1,715	1,515	1,533	1,605	1,718	1,703	1,695	1,716	1,551	1,422	1,433	1,380
1990–1[1]	1,325	1,216	1,320	1,464	—	—	1,875	—	—	1,853	—	—
1991–2[1]	1,765											

[1] Preliminary. *Source: Bureau of the Census* T.616

Average Prices of Crude Domestic Soybean Oil (in Tank Cars) F.O.B. Decatur In Cents per Pound

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
1981–2	19.7	19.9	18.9	18.4	18.2	18.5	19.7	20.6	19.4	19.0	17.9	17.4	19.0
1982–3	17.4	17.6	16.6	16.4	17.3	17.7	19.3	19.8	19.4	21.6	30.2	34.3	20.6
1983–4	30.7	28.1	27.3	28.3	27.2	30.1	32.1	39.0	36.0	31.0	29.0	28.0	30.6
1984–5	30.6	31.9	28.4	28.0	29.6	31.3	33.6	32.5	32.5	29.1	24.1	22.6	29.5
1985–6	20.7	20.6	21.4	20.6	18.6	17.6	17.7	17.8	16.8	16.2	14.3	13.9	18.0
1986–7	14.63	14.88	14.94	15.60	15.40	15.21	15.31	16.22	15.96	15.41	15.16	15.58	15.36
1987–8	17.03	17.55	19.00	21.98	20.94	20.22	21.67	23.56	27.68	29.65	27.16	25.55	22.67
1988–9	23.42	21.55	22.16	21.13	21.21	22.11	21.97	22.23	20.75	19.66	18.08	18.77	21.09
1989–90	19.02	19.57	19.11	19.28	20.27	22.80	23.35	24.72	25.03	24.69	25.05	24.45	22.30
1990–1	22.59	21.05	21.55	21.56	21.66	22.21	21.50	20.23	19.65	19.05	20.22	20.46	20.97
1991–2[1]	19.57	18.78	18.99										

[1] Preliminary. *Source: Bureau of Labor Statistics* T.620



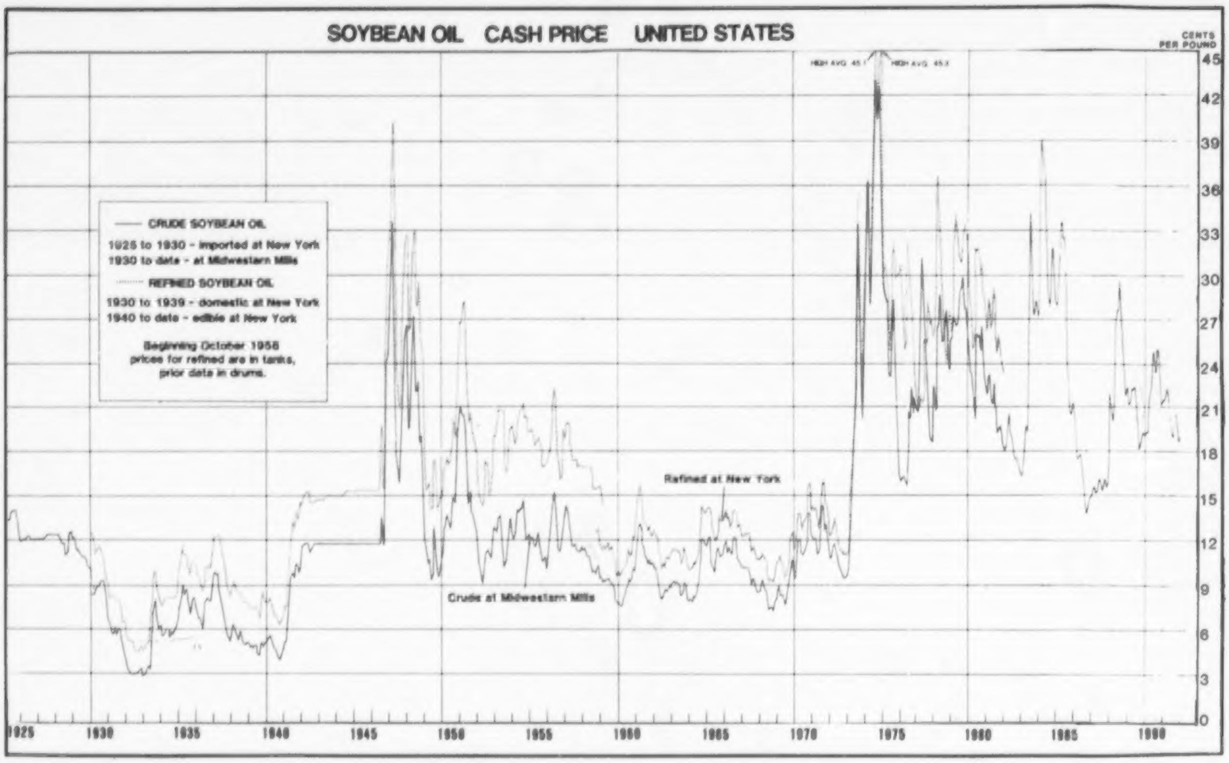
High, Low & Closing Prices of May Soybean Oil Futures on the Chicago Board of Trade ¢ per lb.

Year of Delivery		Year Prior to Delivery										Delivery Year					Life of Delivery Range
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1984	High	—	21.60	21.60	20.75	25.25	34.00	35.85	22.60	30.70	30.10	30.60	28.82	31.55	33.70	41.15	41.15
	Low	—	20.75	19.27	19.75	20.50	25.05	29.90	28.35	26.20	26.50	27.00	25.05	27.72	29.70	31.97	19.27
	Close	—	21.53	20.20	20.75	24.30	32.75	31.00	28.88	27.74	30.08	27.68	28.25	29.82	32.47	39.87	—
1985	High	—	—	29.95	30.10	27.15	27.45	26.50	25.75	26.10	25.60	27.20	27.70	30.60	34.00	33.27	34.00
	Low	—	—	28.10	26.92	23.15	24.35	22.80	23.85	23.78	23.95	24.40	26.30	26.15	30.05	30.65	22.80
	Close	—	—	28.88	27.92	24.35	26.70	23.80	25.07	24.55	24.61	26.67	27.26	30.52	32.53	32.93	—
1986	High	24.40	27.85	27.45	25.80	25.40	24.20	22.65	22.15	21.60	23.04	22.50	20.30	19.27	19.25	18.50	27.85
	Low	24.40	24.40	24.40	24.20	23.90	22.30	21.45	20.02	19.25	19.30	19.91	16.76	16.96	16.90	17.22	16.76
	Close	24.40	27.20	24.53	24.86	24.25	22.60	22.20	20.92	19.60	22.01	20.14	17.06	19.24	18.65	17.50	—
1987	High	20.60	20.90	19.75	18.71	18.40	17.35	15.80	16.75	16.35	16.30	17.38	17.20	16.30	16.14	17.60	20.90
	Low	18.38	18.48	18.50	17.65	17.20	14.75	14.40	14.60	15.27	15.50	15.45	15.84	15.21	1[illegible].30	15.95	14.40
	Close	20.60	19.95	18.68	17.65	17.20	14.90	15.43	15.95	16.19	15.76	17.00	15.91	15.59	15.92	16.56	—
1988	High	—	—	19.25	19.00	18.40	17.50	18.04	19.30	19.55	21.55	23.70	22.33	21.50	22.95	24.80	24.80
	Low	—	—	17.77	17.50	16.85	16.50	16.80	17.81	17.86	19.00	21.32	20.66	19.86	21.32	22.58	16.50
	Close	—	—	17.82	18.15	17.38	16.95	17.75	18.08	19.30	21.41	21.33	21.57	21.21	22.86	24.64	—
1989	High	—	24.25	27.15	33.00	32.90	29.43	29.10	26.15	25.07	24.95	24.05	23.80	23.87	23.45	23.90	33.00
	Low	—	22.42	24.20	25.80	25.90	26.70	25.20	24.22	22.45	22.90	21.56	21.93	22.40	21.75	22.01	21.56
	Close	—	24.25	27.10	31.50	26.90	28.65	25.77	24.72	23.17	23.95	22.44	23.67	22.48	22.83	22.52	—
1990	High	—	25.90	26.15	23.25	23.50	20.55	21.10	20.80	21.09	20.28	20.08	21.50	22.76	23.80	24.88	26.15
	Low	—	24.30	22.77	21.57	19.65	19.30	19.91	19.20	19.63	19.48	19.22	19.32	21.23	21.37	22.60	19.20
	Close	—	25.17	22.77	21.75	19.65	20.05	20.32	20.11	19.93	19.60	19.55	21.47	22.08	23.45	23.72	—
1991	High	21.20	23.00	23.70	24.00	24.91	25.65	25.05	24.25	22.95	22.54	22.90	22.43	23.29	22.29	20.73	25.65
	Low	20.45	20.82	21.70	21.70	23.25	24.00	24.25	22.85	20.87	21.38	20.52	21.29	20.85	20.37	19.50	19.50
	Close	20.75	22.75	21.90	23.91	24.55	24.55	24.39	22.94	22.30	21.43	22.00	21.98	21.23	20.39	19.71	—
1992	High	24.40	23.20	22.40	22.30	23.15	24.00	22.32	21.48	20.35	20.60						
	Low	22.37	22.05	21.28	19.90	19.60	20.10	21.05	19.99	19.36	19.02						
	Close	22.47	22.07	21.95	20.00	22.60	21.32	21.05	20.11	19.63	19.09						

Source: Chicago Board of Trade

T.622

SOYBEAN OIL



Average Open Interest of Soybean Oil Futures of the Chicago Board of Trade In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	50,210	53,926	50,108	51,762	54,574	55,441	55,869	53,243	46,052	43,332	41,425	23,823
1983	48,790	50,751	51,597	60,866	57,007	56,958	54,403	60,570	73,114	79,123	78,857	68,567
1984	61,271	59,187	53,640	57,139	65,025	61,391	54,517	47,204	45,349	40,365	43,138	42,943
1985	37,482	42,453	47,038	56,246	58,675	60,357	55,448	53,111	53,351	47,026	42,732	46,469
1986	48,384	52,875	55,877	56,114	53,063	60,035	63,034	60,095	54,905	57,256	69,227	67,871
1987	71,509	81,610	73,916	75,154	82,843	86,672	83,041	68,373	65,973	68,860	73,194	79,985
1988	85,953	88,260	86,472	85,712	87,253	94,791	95,931	87,566	86,994	82,541	82,477	75,688
1989	77,741	81,676	78,235	77,249	73,623	76,572	70,644	68,652	63,751	63,911	69,248	68,166
1990	73,368	80,842	87,615	92,845	103,116	103,747	88,763	81,310	73,841	78,548	86,786	75,995
1991	72,987	71,607	76,800	70,361	70,954	73,870	73,864	70,058	66,128	61,227	69,657	63,901
1992												

Source: Chicago Board of Trade T.625

Volume of Trading of Soybean Oil Futures at the Chicago Board of Trade In Thousands of Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	219.1	245.6	239.8	272.2	277.7	270.7	264.5	294.9	260.5	195.4	307.4	221.6	3,049
1983	273.6	244.1	264.4	273.2	233.1	288.9	332.6	452.3	445.4	378.7	355.5	316.7	3,859
1984	358.3	346.5	337.7	360.0	513.7	436.7	353.6	280.8	244.2	269.5	288.0	220.5	4,010
1985	264.2	256.0	311.6	405.0	416.4	308.7	341.1	281.5	233.0	270.0	281.5	278.4	3,647
1986	263.1	235.9	254.0	311.7	273.8	262.0	296.0	237.9	202.7	324.8	261.4	259.6	3,183
1987	347.3	304.8	267.7	303.4	374.2	363.9	356.3	267.6	301.1	349.8	315.1	361.2	3,912
1988	437.0	390.7	346.8	442.7	399.2	580.2	461.4	403.6	390.0	303.1	377.3	364.2	4,896
1989	317.8	347.7	368.1	384.7	426.4	386.3	414.5	348.8	320.8	341.0	344.2	298.6	4,301
1990	294.1	397.1	413.9	447.7	488.8	441.5	462.3	405.6	319.2	344.1	370.2	266.3	4,651
1991	330.2	259.4	355.0	342.1	364.6	322.9	433.8	399.8	303.2	340.6	297.9	369.3	4,119
1992													

Source: Chicago Board of Trade T.626

Soybeans

Soybeans account for about half of all the oilseeds produced worldwide. Global output of soybeans in 1991/92 was forecast to rise slightly to just over 105 million tonnes. The U.S. remained the largest grower. Brazil, Argentina and Paraguay have been able to expand production because of newly developed acreage, fertile soils, and favorable climates. However, there were signs that the expansion of the last two decades was slowing. Political pressure to slow or stop the development of tropical forests has been increasing, and Brazilian policies have discouraged excessive land development.

Brazil's crop was forecast to rebound to 17.5 million tonnes in 1991/92, more than 10 percent above the drought-damaged offtake of the previous season. Argentina's outturn was projected to be about 11 million tonnes, the same as a year earlier. South American producers faced considerable uncertainties concerning inflation and government credit policies. China was another large grower, producing nearly 10 million tonnes.

World trade in soybeans was expected to expand by 6 percent to about 26.7 million tonnes. Soybeans are by far the most widely traded oilseed. The U.S. remained the dominant exporter. Brazil and Argentina have an export market share approaching 25 percent. Both countries have large-capacity crushing facilities for oilseeds. Government tax policies that favor exportation of the products, meal and oil, have been modified, but exporting the products is still favored. Brazil exports mostly soymeal, while Argentina is a major seller of oil.

Brazil's exports of soybeans were forecast at almost 3 million tonnes, up over 10 percent from 1990/91. Argentina was projected to export 3.3 million tonnes of soybeans, down over 25 percent from the year before.

The major importers of soybeans were the EC, Japan, Taiwan and Mexico. The EC maintains large processing facilities and exports soymeal and oil.

The world soybean crush was forecast to reach 88.5 million tonnes, about the same as a year earlier. The U.S. processed just under 40 percent of the world crop, while Brazil and Argentina were expected to crush about 23 percent. The EC crush was put at about 12 million tonnes.

Global ending stocks of soybeans in 1991/92 were forecast at almost 19 million tonnes, down slightly from the year before.

The U.S. soybean crop in 1991 was 1.96 billion bushels, almost 2 percent larger. Area planted rose about 2 million acres to 59.8 million. The trend has been toward increased acreage in the Corn Belt, while plantings in the Delta and Southeast have declined. Yields in the Corn Belt are generally higher. U.S. harvested acreage was estimated at 58.6 million in 1991, against 56.5 million a year earlier. Under the provisions of the Farm Bill, producers of grains like corn were allowed to shift some of their acreage to soybeans without losing farm program benefits. This allowed planting of soybeans on the base acreage of other crops.

Despite a hot, dry summer, particularly in the eastern Corn Belt, the national average soybean yield declined only 1 percent to 33.5 bushels per acre. During September, beneficial rains arrived, and the crop was better than most had expected. The largest producer was Iowa, followed by Illinois, Minnesota, Indiana and Ohio.

Domestic stocks at the beginning of the season were 329 million bushels, some 38 percent higher than in 1990/91. Total supplies were 2.3 billion bushels, or almost 6 percent more than a year earlier. Demand for soymeal for domestic purposes and exports increased, and the projected soybean crush was 1.23 billion bushels, up 4 percent.

U.S. soybean exports were slated to rise by 17 percent to 650 million bushels. The export situation was helped by reduced competition from Brazil and evidence that the nations of the former Soviet Union would purchase more beans and products. Major markets for U.S. soybeans were Japan, the Netherlands, Spain, South Korea and Taiwan.

U.S. ending stocks in 1991/92 were to fall 4 percent from a year earlier to 315 million bushels.

U.S. Farm Program

Planting flexibility was implemented in 1991. Producers of program crops like corn were able to plant some of their acreage to soybeans with losing program benefits. A soybean marketing loan was in effect, and the loan rate was $4.92 a bushel.

Futures Market

Soybean futures and options are traded on the Chicago Board of Trade.

World Production of Soybeans In Thousands of Metric Tons

Crop[3] Year	Argentina	Brazil	Canada	China	Colombia	India	Indonesia	Japan	Rep. of Korea	Mexico	Romania	Paraguay	Thailand	United States	USSR	World Total
1986–7	7,000	17,300	960	11,610	128	891	900	245	199	660	472	950	356	52,801	703	98,100
1987–8	9,700	18,021	1,267	12,470	115	980	950	287	203	750	350	1,100	338	52,750	712	103,810
1988–9	6,500	23,200	1,100	11,650	200	1,400	1,100	277	259	300	340	1,620	450	42,150	880	95,640
1989–90	10,750	20,340	1,219	10,230		270						1,580		52,350	920	107,270
1990–1[1]	10,800	15,500	1,200	11,000		285						1,300		52,420	950	103,100
1991–2[2]	10,750	17,500		10,800								1,600		49,450		101,990

[1] Preliminary. [2] Projected. [3] Split year includes Northern Hemisphere crops harvested in the late months of the first year shown combined with Southern Hemisphere crops harvested in the early months of the following year. *Source: Foreign Agricultural Service, U.S.D.A.* T.627

SOYBEANS

Supply and Distribution of Soybeans in the United States In Millions of Bushels

Crop Year Begin. Sept. 1	Supply: Stocks, Sept. 1: Farms	Supply: Stocks, Sept. 1: Mills, Elevators[2]	Supply: Stocks, Sept. 1: Total	Supply: Production	Supply: Total Supply	Distribution: Crushings	Distribution: Exports	Distribution: Seed	Distribution: Feed	Distribution: Residual	Total Distribution
1982–3	117.7	136.7	254.5	2,190.3	2,444	1,108	905	86			2,099
1983–4	118.6	226.1	344.6	1,635.8	1,981	983	743	79			1,805
1984–5	67.9	107.8	175.7	1,860.9	2,037	1,030	598	93			1,721
1985–6	143.2	172.8	316.1	2,099.1	2,415	1,053	740	86			1,879
1986–7	167.1	369.3	536.4	1,942.6	2,479	1,179	757	106			2,042
1987–8	108.0	328.5	436.4	1,938.1	2,375	1,174	802	97			2,073
1988–9	105.1	197.4	302.5	1,548.8	1,855	1,058	527	88			1,673
1989–90	87.3	94.7	182.0	1,923.7	2,109	1,146	623	101			1,870
1990–1[1]	86.0	153.1	239.1	1,902.6	2,167	1,187	557	94			1,838
1991–2[3]	118.4	210.6	329	1,986	2,320	1,235	665	95			1,995

[1] Preliminary. [2] Also warehouses. [3] Estimates. *Source: Economic Research Service, U.S.D.A.* T.632

U.S. Soybean Price Support Program & Official Crop Production Reports In Millions of Bushels

Crop Year Begin. Sept.	Quantity Put Under Support	% of Production	Sept. 1 Stocks: Total	Sept. 1 Stocks: Gov't. Owned	National Avg. Support: % of Parity	National Avg. Support: $ Per Bu.	(In Thousands of Bushels) Crop Production Reports: August 1	September 1	October 1	November 1	December 1	Final
1982	396.6	18.1	254.5	20.9	39	5.02	2,293,420	2,313,880	2,300,345	2,299,520	2,276,976	2,190,297
1983	101.2	6.2	344.6	.7	39	5.02	1,843,459	1,534,969	1,517,019	1,536,519	1,595,437	1,635,772
1984	278.3	15.0	175.7	4.4	39	5.02	2,035,370	2,027,565	1,971,700	1,901,565	1,860,783	1,860,863
1985	517.8	24.7	316.1	131.3	40	5.02	1,959,439	2,062,889	2,108,379	2,129,034	2,098,531	2,099,056
1986	327.6	16.9	536.4	249.2	39	4.77	1,979,773	1,979,773	1,991,763	2,009,333	2,007,033	1,942,558
1987	274.7	14.3	436.4	6.9	39	4.77	2,000,349	1,956,859	1,968,069	1,959,949	1,904,712	1,938,087
1988	120.1	7.8	302.5		40	4.77	1,473,986	1,472,376	1,501,381	1,511,876	—	1,548,841
1989	208.8	10.8	182.0		37	4.53	1,905,300	1,889,265	1,926,385	1,936,545	—	1,926,806
1990[1]			239.1			4.50	1,836,017	1,834,602	1,823,462	1,903,832	—	1,925,947
1991[1]							1,868,825	1,816,825	1,933,570	1,985,564	—	

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.628

Soybean Stocks in the United States In Millions of Bushels

Year	On Farms: Mar. 1	On Farms: June 1	On Farms: Sept. 1	On Farms: Dec. 1	Off Farms: Mar. 1	Off Farms: June 1	Off Farms: Sept. 1	Off Farms: Dec. 1	Total Stocks: Mar. 1	Total Stocks: June 1	Total Stocks: Sept. 1	Total Stocks: Dec. 1
1985	N.A.	326.6	143.2	1,030.9	N.A.	281.8	172.8	929.0	N.A.	608.4	316.1	1,959.8
1986	699.3	411.7	167.1	1,061.0	671.9	437.2	369.3	895.6	1,371.3	848.9	536.4	1,956.6
1987	589.0	282.1	108.0	868.3	750.0	554.7	328.5	890.0	1,339.0	836.8	436.4	1,758.3
1988	553.1	304.9	105.1	650.0	594.6	351.4	197.4	716.8	1,147.7	656.3	302.5	1,366.8
1989	415.0	229.2	87.3	793.4	475.2	235.3	94.7	816.6	890.2	464.5	182.0	1,610.7
1990	535.8	255.3	86.0	754.0	519.7	340.6	153.1	930.0	1,055.5	595.9	239.1	1,684.0
1991[1]	555.5	336.5	118.4	810.0	634.6	387.0	210.6	968.4	1,190.1	723.5	329.0	1,778.4

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.629

U.S. Commercial Stocks of Soybeans on the First of the Month In Millions of Bushels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	50.6	50.4	41.1	39.9	34.7	67.4	21.5	18.4	11.5	12.8	43.9	53.5
1983	53.6	58.2	57.5	55.7	55.9	44.7	34.9	35.8	42.5	47.0	78.8	83.0
1984	77.2	74.4	65.2	58.6	49.2	41.1	35.4	20.8	7.9	6.7	23.3	41.7
1985	41.1	44.0	38.2	33.3	22.8	14.7	12.7	11.3	6.9	9.6	47.6	60.9
1986	61.7	63.9	57.3	53.6	40.2	30.5	24.9	24.5	24.8	30.1	52.5	61.5
1987	62.0	61.4	56.9	52.5	49.4	46.3	38.4	26.0	16.6	21.3	56.5	57.1
1988	63.0	66.9	63.6	61.2	54.6	51.7	53.2	54.5	46.0	41.6	74.7	80.9
1989	81.3	75.6	63.8	53.4	35.8	31.2	21.1	18.6	14.1	11.4	62.1	71.3
1990	65.8	62.1	57.8	53.2	56.2	54.4	48.1	41.4	26.1	24.1	89.7	90.7
1991	86.6	73.1	67.3	58.8	45.0	35.5	25.6	25.8	26.0	75.2	84.7	76.0

Source: Foreign Agricultural Service, U.S.D.A. T.630

Salient Statistics of Soybeans in the United States

Crop Year	Planted — 1,000 Acres —	Acreage Harvested — 1,000 Acres —	Yield Per Acre (Bus.)	Farm Price ($ Bu.)	Farm Value (Million Dollars)	— Pounds Per — Bushel Crushed Yield of Oil	— Pounds Per — Bushel Crushed Yield of Meal	U.S. Exports of Soybeans Crop Year (Sept.-Aug.) (Ths. Metric Tons) Grand Total	Bel.-Luxem.	Spain	Canada	Germany	Japan	Netherlands	Taiwan	U.S.S.R.
1976–7	50,269	49,401	26.1	6.81	8,769	11.09	47.81	15,351	411	1,030	462	1,520	3,219	3,007	697	825
1977–8	58,978	57,830	30.6	5.88	10,363	10.39	47.34	19,061	475	1,532	264	1,521	3,636	4,086	854	744
1978–9	64,708	63,663	29.4	6.66	12,450	11.07	47.63	20,117	420	1,475	352	1,486	3,865	4,012	1,271	1,178
1979–0	71,411	70,343	32.1	6.28	14,204	10.74	48.01	23,818	584	2,203	392	1,318	3,868	6,035	780	813
1980–1	60,930	67,813	26.5	7.57	13,601	11.09	47.93	19,712	670	1,383	345	1,791	3,816	3,839	1,063	
1981–2	67,543	66,163	30.1	6.04	12,005	10.72	47.86	25,285	1,404	3,855	310	2,135	4,196	5,349	1,059	683
1982–3	70,884	69,442	31.5	5.65	12,463	10.76	47.88	24,634	1,259	2,313	324	1,813	4,580	4,648	1,300	199
1983–4	63,779	62,525	26.2	7.83	12,775	11.26	47.36	20,215	882	1,800	248	967	4,394	2,988	1,382	408
1984–5	67,755	66,113	28.1	5.84	10,748	11.05	47.15	16,279	658	1,084	140	718	3,828	2,857	1,389	0
1985–6	63,145	61,599	34.1	5.05	10,571	11.01	47.27	20,158	784	1,519	114	934	4,293	3,056	1,506	1,519
1986–7	60,405	58,312	33.3	4.78	9,263	10.86	47.08	20,600	888	1,775	206	1,393	4,024	3,540	1,968	71
1987–8	58,180	57,172	33.7	5.88	11,391	11.04	47.76	21,870	825	1,593	154	1,416	3,914	4,267	1,857	831
1988–9	58,840	57,373	26.9	7.42	11,488	11.16	47.43	14,356	474	1,152	113	601	3,251	2,531	1,439	240
1989–0[1]	60,820	59,538	32.3	5.69	10,732	11.17	47.55	16,933	666	1,565	276	818	3,480	2,721	2,016	342
1990–1[1]	57,795	56,512	34.1	5.75	11,346	11.19	46.90	15,161	413	1,027	156	760	3,584	2,085	1,087	354
1991–2[2]	59,775	58,633	33.0	5.50												

[1] Preliminary. [2] Forecast. *Source: Crop Reporting Board, U.S.D.A.* T.631

Production of Soybeans for Beans in the U.S., by Selected States In Millions of Bushels

Year	Ark.	So. Car.	Ill.	Ind.	Iowa	La.	Mich.	Minn.	Miss.	Mo.	N. Car.	Ohio	Tenn.	Nebr.	Ky.
1976	82.1	21.4	249.5	111.5	200.0	63.0	11.6	66.4	71.5	84.0	24.6	95.0	40.5	19.6	28.9
1977	105.8	26.7	336.3	144.3	251.3	63.0	21.6	133.8	78.5	148.8	29.0	120.0	52.2	40.7	40.9
1978	115.2	32.3	309.5	144.2	283.1	76.0	21.6	146.2	81.7	155.0	40.3	127.7	56.9	42.5	40.8
1979	144.2	39.8	379.1	159.1	306.4	93.8	30.3	162.6	118.9	183.6	45.8	144.8	70.7	54.7	54.0
1980	65.3	20.8	309.9	157.7	318.4	67.0	30.4	149.9	61.6	135.5	34.7	135.4	45.9	53.1	36.0
1981	99.0	31.0	351.5	151.8	326.0	64.2	29.1	139.2	75.6	155.6	46.3	99.8	61.1	78.7	47.9
1982	105.6	39.6	354.2	173.3	306.6	75.4	35.3	169.1	92.3	171.0	52.5	133.2	61.0	78.8	51.3
1983	70.3	23.6	267.0	122.5	278.6	68.1	33.8	151.8	58.9	103.0	33.0	105.0	31.5	59.0	24.5
1984	101.4	29.8	284.1	150.1	264.6	66.8	32.1	172.9	76.8	108.7	46.5	137.6	48.1	66.3	42.3
1985	98.1	24.6	382.5	185.1	309.7	44.1	34.6	160.0	70.7	180.4	39.1	160.6	45.3	85.0	41.8
1986	66.0	13.7	360.0	157.3	350.7	35.0	28.8	162.8	41.7	170.6	36.7	146.6	35.5	93.1	35.8
1987	71.5	15.7	330.6	174.0	343.7	38.8	38.2	181.4	47.8	154.6	32.8	147.3	28.8	83.4	24.0
1988	83.2	18.6	234.9	115.5	251.1	56.6	35.1	124.8	49.5	112.1	35.4	99.9	32.0	70.8	24.1
1989	75.2	20.2	354.0	166.1	322.9	38.5	38.9	185.0	40.0	121.8	41.9	125.4	29.8	81.9	36.9
1990	90.5	13.9	354.9	171.4	327.9	42.0	43.3	179.4	39.9	124.5	32.4	135.7	33.8	81.4	39.0
1991[1]	83.7	14.1	336.7	168.3	339.3	34.8	48.7	203.3	41.4	129.1	33.8	139.7	27.3	80.9	31.6

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.633

Soybean Stocks at U.S. Mills on First of Month[2] In Millions of Bushels

Crop Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1978–9	37.9	31.9	138.4	149.4	127.3	112.4	124.0	120.9	96.7	71.1	73.0	55.6
1979–0	37.5	39.2	166.5	184.5	163.3	145.4	130.7	118.6	95.8	79.7	75.7	73.9
1980–1	56.9	80.4	166.0	172.0	138.7	125.9	105.4	97.2	84.4	67.8	49.2	43.9
1981–2	33.4	31.5	105.8	135.2	114.5	99.8	84.6	79.2	72.2	60.8	51.2	43.6
1982–3	30.0	29.0	114.2	145.5	125.1	116.2	98.5	96.2	84.6	69.8	62.0	55.4
1983–4	58.6	63.9	124.5	142.3	124.0	125.3	114.8	105.3	94.2	101.7	83.4	57.7
1984–5	35.3	19.7	53.9	116.4	98.4	85.9	65.8	69.7	65.2	53.4	47.6	36.0
1985–6	26.7	25.7	92.8	113.4	119.9	124.6	97.5	84.9	67.6	53.2	40.7	40.2
1986–7	28.5	38.3	108.1	127.4	117.2	113.1	105.4	90.2	85.2	72.9	63.6	49.8
1987–8	31.2	65.7	158.5	155.5	145.0	141.8	139.3	133.8	113.9	95.4	90.1	66.2
1988–9	59.7	61.4	136.6	147.4	138.6	131.9	112.0	99.2	72.8	52.5	46.1	31.0
1989–90	23.8	24.5	96.3	108.5	89.7	93.6	91.4	83.5	73.0	67.5	58.8	46.9
1990–1[1]	45.2	—	34.5	—	—	106.5	—	—	78.5	—	—	61.2
1991–2[1]	—											

[1] Preliminary. [2] Beginning Jan. 1, 1991—monthly reports of stocks are on a quarterly basis instead of monthly. *Source: Economic Research Service, U.S.D.A.* T.635

SOYBEANS

Soybean Exports from the United States In Millions of Bushels

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1980–1	41.4	60.3	75.0	74.5	71.7	55.5	103.2	60.0	69.6	41.8	29.6	41.8	724.3
1981–2	50.9	100.8	103.7	73.6	84.3	89.4	79.0	85.7	90.6	59.8	53.8	57.5	929.1
1982–3	58.0	94.4	93.6	90.1	86.3	87.2	84.4	73.3	58.5	67.7	51.6	60.2	905.2
1983–4	53.9	67.6	69.2	74.5	80.4	79.7	78.8	68.5	56.8	41.1	39.2	30.7	686.6
1984–5	19.0	40.9	93.5	84.8	70.3	72.6	59.8	60.4	33.1	18.2	19.2	26.3	598.2
1985–6	31.5	55.3	79.6	94.1	84.7	92.1	89.9	80.4	57.2	28.7	26.6	20.4	740.7
1986–7	30.2	89.7	96.6	89.0	71.7	73.8	67.8	53.9	37.6	37.9	54.3	54.5	756.9
1987–8	59.4	101.1	100.4	81.1	80.8	97.0	78.5	66.7	39.7	29.3	30.4	37.2	801.7
1988–9	26.7	50.2	61.3	69.3	66.3	56.1	66.8	40.8	23.2	31.2	16.4	18.3	526.5
1989–90[1]	17.9	74.0	76.6	65.7	76.3	74.9	87.3	43.6	22.8	35.2	20.8	28.3	626.4
1990–1[1]	27.9	29.7	62.8	49.5	191.9			118.5			—	100.7	559.5

[1] Preliminary. *Source: Bureau of the Census*

T.636

High, Low & Closing Prices of May Soybean Futures at the Chicago Board of Trade In Cents per Bushel

Year of Delivery		Year Prior to Delivery										Delivery Year					Life of Delivery Range
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
1984	High	718	732	720	678	794	984	996	927	903½	853	825	768	815	813	894	996
	Low	645	695½	659	630	657½	760	859½	831	791	775½	738	706	762	765	768½	630
	Close	714	719	659½	660	761	930	890	851	822	843½	747½	765	789	771	888	—
1985	High	773	777	784	797	764	700	675	678	676½	640½	624	619½	614	609¾	590¾	797
	Low	753	737	744½	736	940	643½	601	623	623	597¼	581¾	572	570¾	585	568	568
	Close	768½	737	777	761	646½	675	627	659¾	634¼	599	613¼	573	605½	588	568	—
1986	High	645	650	637	616	618	560½	560½	551½	557	567	566½	545	548	563	549	650
	Low	608½	631	583½	577	547	531¼	532	534¼	549	504	537	523¼	527¼	519½	527	504
	Close	643½	636½	590½	583	555¼	541	547½	548¾	513	554	542½	529¾	541½	544	534½	—
1987	High	554	574	574	536	541½	529½	513¾	514	512	511¼	502¼	500¾	498	536	584	584
	Low	535½	522	529½	509½	504½	492	491¾	493¼	501	489	489	478½	482½	496½	531¼	478½
	Close	544¾	564½	529½	510	525	502	508½	509	510½	498¼	498¾	483	496½	534½	549½	—
1988	High	505½	554	634	650	577	539	554¼	576	626½	629½	651	656	656	690	784	784
	Low	488	509	549½	566	532	509	520½	540½	538½	592¼	610	603½	608	656	682	476
	Close	504	554	579	575	547½	521¾	550½	549½	618½	622	616½	642½	653½	689½	777	—
1989	High	693	735	828	1003	960	882	912	843	826	828	842	788	794½	761	771	1,003
	Low	647	702½	727	814	747	806	816½	782	748	767½	752	732½	733	704½	723½	642
	Close	693	735	828	935½	795	870	826¾	802¼	779½	827¼	784½	773½	738¼	722½	739	—
1990	High	778	769	750	700	730	628	626	624	621½	613	599¾	585½	606½	639	655	778
	Low	732½	711	651	641	601½	589	597	573½	593¼	592¼	566¼	570¼	577½	581½	602	566¼
	Close	734	730½	651	673	601¾	618¾	602½	595½	607¼	596	573½	580¾	595	632½	604½	—
1991	High	653	692	706	683¾	711	680½	676½	671½	643	633½	603¾	596½	610½	601	588½	711
	Low	625½	635	650	633½	622	617½	643½	634	592	585½	561	576½	566½	575½	559	559
	Close	645¾	689	652½	683¾	639	647	654¼	636¼	617¼	588¾	580½	588	574¾	576½	564	—
1992	High	666	660½	641	627½	642	668	643½									
	Low	629½	636	610½	561	547	559½	607									
	Close	638	637	624	566	625¾	617½	616¼									

Source: Chicago Board of Trade

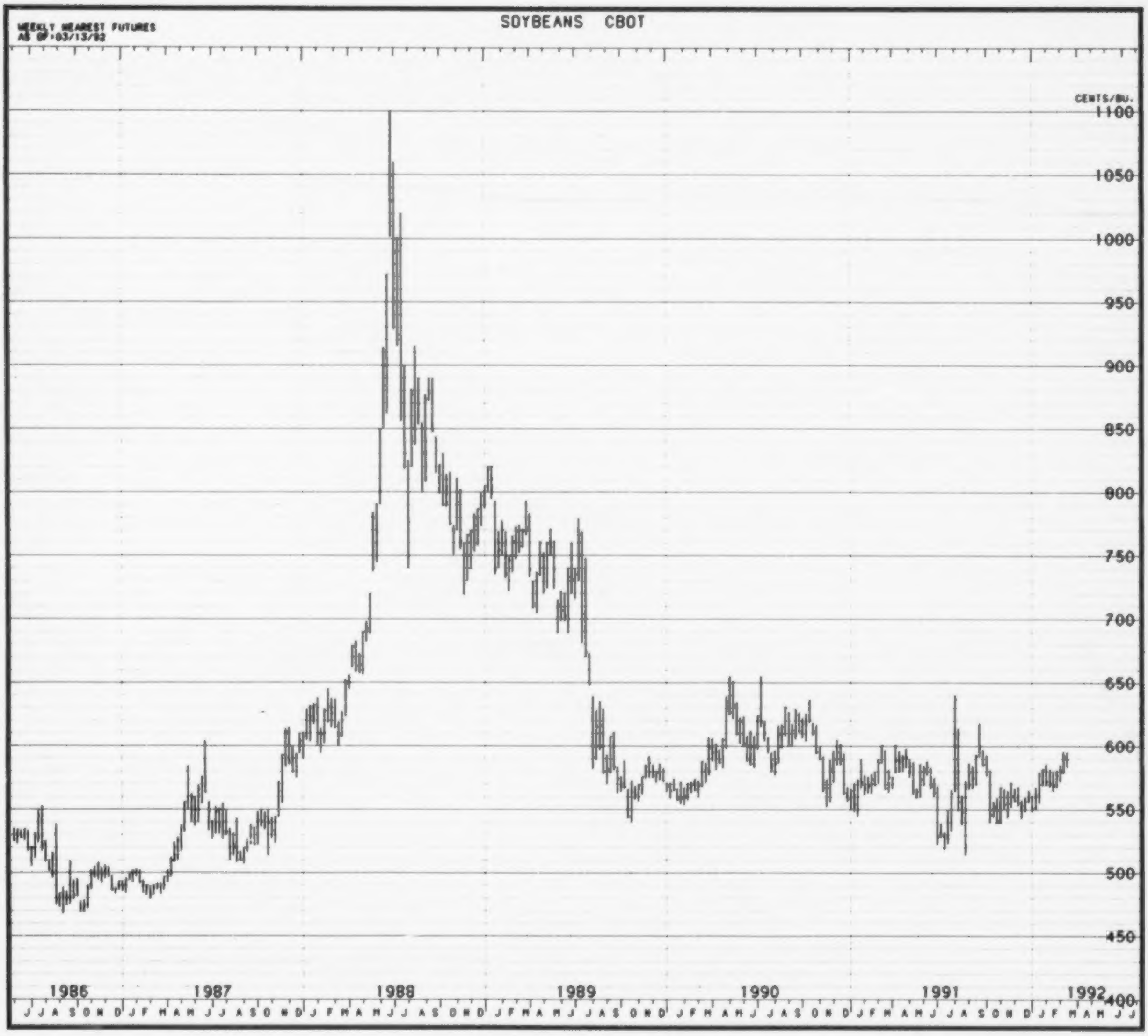
T.634

Volume of Trading in Soybean Futures at the Chicago Board of Trade In Millions of Bushels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	3,120	3,497	4,478	4,484	3,517	4,245	4,017	3,822	3,197	4,014	4,282	3,198	45,828
1983	3,942	3,820	4,247	4,375	4,259	4,409	6,224	8,799	7,852	8,071	6,793	5,609	68,402
1984	5,550	5,247	6,008	4,945	7,300	6,323	5,314	4,045	2,505	3,687	3,427	2,463	56,813
1985	3,315	2,749	2,657	2,821	2,766	3,309	3,779	2,581	2,525	3,364	3,881	3,213	36,961
1986	3,692	2,484	2,435	2,976	2,546	2,199	2,925	2,049	1,812	3,266	2,473	1,811	30,668
1987	2,174	1,816	1,794	3,118	3,969	4,356	3,785	1,935	2,305	4,109	3,674	3,859	36,894
1988	4,436	4,252	4,284	4,822	6,339	7,975	5,574	5,214	4,516	5,235	5,001	4,777	62,485
1989	5,222	4,265	4,760	4,720	4,587	4,466	3,977	3,172	2,854	4,011	3,247	2,893	48,174
1990	3,278	2,673	4,133	4,422	5,630	5,209	5,188	4,528	3,214	5,660	4,299	3,275	67,887
1991	3,725	3,104	3,577	4,040	3,422	3,881	4,962	4,716	3,312	4,381	2,856	3,095	44,871

Source: Commodity Futures Trading Commission

T.638



Average Open Interest of Soybean Futures at Chicago Board of Trade In Millions of Bushels

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1980	542,923	555,696	506,850	512,455	501,404	544,760	669,411	716,959	836,481	994,450	1,069,985	1,083,919
1981	760,433	618,363	556,355	586,500	516,510	517,640	497,162	452,323	440,217	472,908	485,995	482,498
1982	404,223	406,528	393,035	460,729	418,686	391,052	374,053	380,213	355,169	397,810	425,089	438,322
1983	442,828	456,830	416,479	505,813	462,581	420,022	455,472	670,320	714,951	748,973	655,300	631,981
1984	558,727	544,108	564,202	535,411	546,508	495,022	360,313	286,738	270,991	326,171	353,568	356,011
1985	348,140	364,738	327,450	317,610	306,381	329,845	314,415	324,314	315,912	353,915	375,558	367,207
1986	377,175	375,378	374,277	382,321	342,736	333,767	303,102	290,679	298,112	366,628	410,962	405,791
1987	373,975	374,970	384,749	448,282	472,715	460,889	396,495	364,262	373,807	524,582	537,224	589,553
1988	592,560	617,929	609,312	692,576	763,473	849,772	644,812	574,151	598,951	607,404	558,608	603,549
1989	598,499	572,342	579,959	513,682	484,011	472,263	417,035	379,628	404,830	503,966	482,161	493,360
1990	478,591	496,834	556,976	615,027	655,864	590,047	483,946	458,531	489,646	599,204	625,678	617,759
1991	546,555	552,104	551,590	534,973	511,847	516,809	457,245	430,659	490,248	571,031	562,037	563,908
1992												

Source: Chicago Board of Trade

T.642

SOYBEANS

Soybeans Under Price Support Through the End of the Month (Cumulative Total from Current Season's Crop) In Thousands of Bushels

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1978–9	0	6,403	31,008	43,015	58,278	61,489	62,365	63,146	63,508	65,087	—	—
1979–0	11	9,507	39,559	67,372	101,052	106,135	113,638	119,860	121,684	122,013	—	—
1980–1	22	11,705	28,541	67,744	100,809	116,167	125,480	130,236	132,346	133,160	—	—
1981–2	1,044	26,019	81,377	138,202	191,386	208,285	216,412	219,743	144,165	221,303		
1982–3	861	50,145	203,031	311,105	363,696	382,536	391,432	393,567	394,727	395,893		
1983–4	0	9,098	32,869	62,736	84,526	92,974	98,945	100,030	100,656	100,817		
1984–5	0	46,349	99,437	174,002	242,526	258,174	268,812	271,353	274,051	275,687		
1985–6	1,056	86,633	265,929	408,793	482,658	499,223	506,818	511,462	513,089	513,954	—	—
1986–7	313	34,971	154,207	240,072	299,018	316,598	321,327	327,233	329,094	329,766	329,971	—
1987–8	4,383	58,666	165,997	209,121	259,010	211,856	272,632	274,046	274,774	274,952	274,929	—
1988–9	896	16,805	44,627	81,131	106,033	115,210	118,487	119,356	119,674	120,033	120,034	—
1989–90	294	35,539	119,734	159,422	195,471	201,659	207,676	208,359	208,715	208,835	208,897	—
1990–1	172	26,109	124,610									

Source: U.S. Department of Agriculture T.639

Soybeans Crushed (Factory Consumption) in the U.S. In Millions of Bushels—One Bushel = 60 Pounds

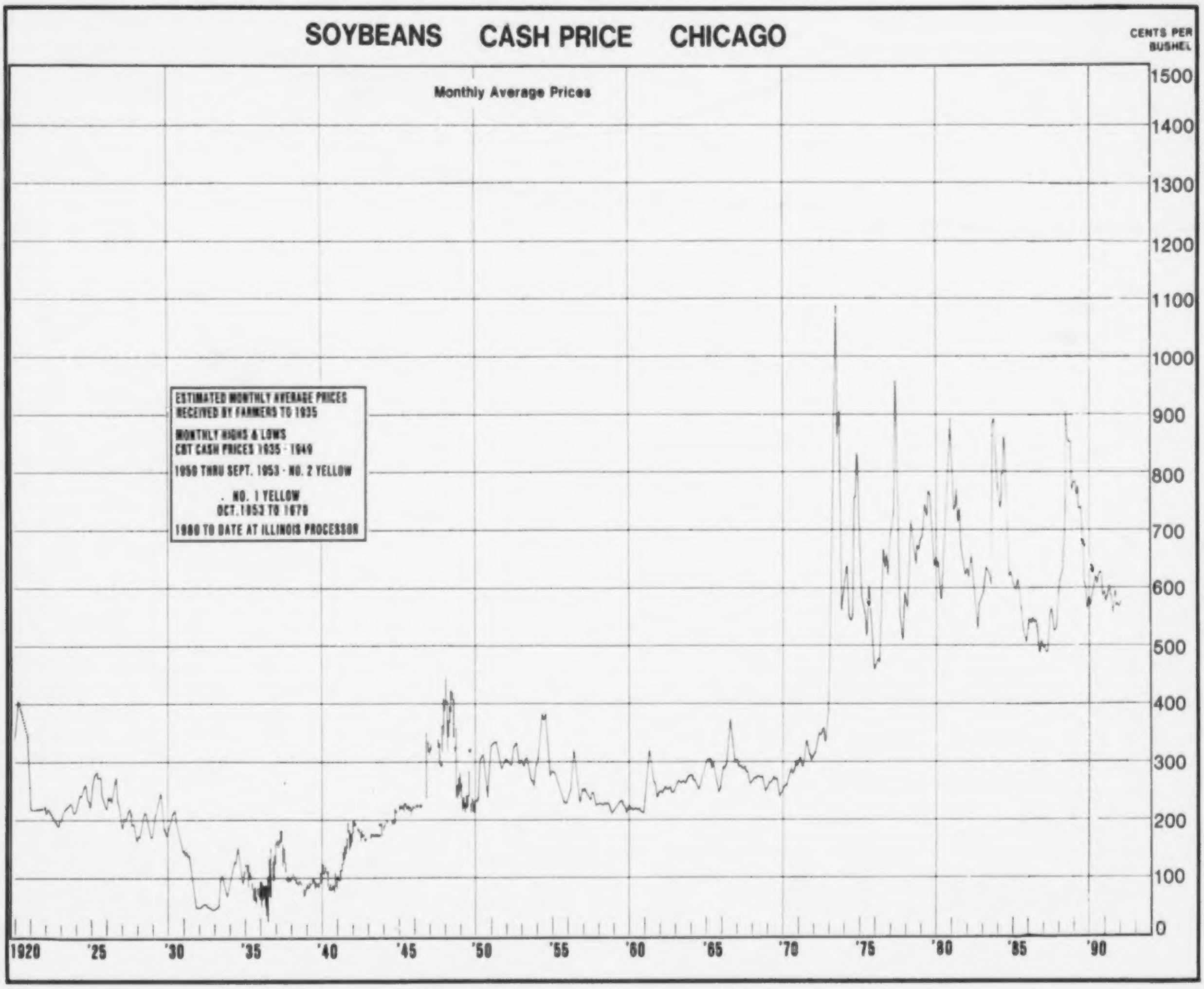
Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1978–9	71.4	89.3	89.6	96.4	90.6	81.5	89.0	83.3	86.9	82.8	80.6	76.4	1,018
1979–0	75.9	95.8	101.4	104.4	106.6	100.0	102.2	92.0	93.8	82.7	84.9	83.7	1,123
1980–1	81.0	97.8	98.5	94.1	92.2	79.6	88.7	85.4	82.3	73.4	72.3	74.6	1,020
1981–2	75.4	104.5	97.6	102.5	94.9	86.7	85.1	81.0	86.6	77.1	70.6	67.8	1,030
1982–3	76.0	100.2	108.1	111.9	110.0	93.0	94.6	81.8	83.7	81.5	81.6	85.7	1,108
1983–4	86.6	96.4	86.6	89.4	93.8	79.2	86.0	74.6	79.4	70.6	69.0	71.1	982.7
1984–5	65.5	89.2	98.9	101.1	94.5	80.8	85.6	83.2	89.3	82.7	82.0	77.5	1,030
1985–6	76.5	94.3	96.7	100.8	99.6	81.4	91.6	84.4	86.3	79.6	83.1	78.4	1,053
1986–7	79.4	107.0	109.4	107.6	110.3	102.3	106.0	95.9	95.3	90.6	92.6	82.4	1,179
1987–8	79.7	102.5	111.2	110.8	106.7	99.8	107.6	102.6	98.0	89.2	88.0	78.3	1,174
1988–9	79.9	94.4	101.0	100.7	99.8	85.8	93.5	89.6	87.0	76.0	74.0	75.9	1,058
1989–90	74.1	94.8	104.1	105.4	107.2	91.8	102.8	95.1	93.4	92.0	92.2	94.2	1,147
1990–1[1]	92.1	106.1	106.0	104.9	———	297.9	———	———	280.1	———			

[1] Preliminary. *Source: Bureau of the Census* T.641

Average Price Received by Farmers for Soybeans in the U.S. In Cents Per Bushel

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
1978–79	620	626	641	649	658	699	716	706	706	736	736	707	666
1979–80	681	635	630	627	639	620	594	563	576	591	675	718	628
1980–81	759	768	818	780	780	750	759	760	740	705	713	671	757
1981–82	621	606	603	600	613	604	604	617	627	612	599	559	604
1982–83	522	506	534	546	556	566	582	609	606	590	627	757	565
1983–84	828	796	780	774	785	728	768	783	812	799	695	650	783
1984–5	609	607	601	582	591	577	588	588	570	562	542	510	584
1985–6	499	485	492	501	516	518	523	523	525	519	511	499	505
1986–7	485	455	464	467	470	469	473	490	520	536	525	502	478
1987–8	502	504	536	563	573	596	605	639	698	818	850	833	588
1988–9	793	753	743	753	769	741	751	729	720	705	683	607	742
1989–90	570	554	566	564	565	556	565	582	597	588	597	600	570
1990–1	599	587	578	572	572	565	577	577	559	555	536	566	575
1991–2	579												

Source: Crop Reporting Board T.637



Average Cash Price of No. 1 Yellow Soybeans at Illinois Processor In Cents per Bushel

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
1976–7	516	622	655	686	706	726	825	960	942	825	640	549	721
1977–8	642	507	584	594	573	565	658	681	701	676	662	647	624
1978–9	704	672	668	681	689	728	745	727	721	768	764	728	716
1979–0	813	656	652	653	636	642	607	580	604	610	722	745	660
1980–1	644	827	891	773	757	734	737	772	758	713	736	694	753
1981–2	540	630	628	623	630	624	616	642	656	631	620	573	618
1982–3	893	526	570	573	581	586	598	635	627	606	659	846	640
1983–4	621	846	820	777	767	737	797	798	861	791	685	663	786
1984–5	519	627	625	607	604	597	608	613	595	588	565	528	598
1985–6	496	505	519	532	545	538	547	540	544	543	533	500	530
1986–7	527	489	508	496	495	489	492	512	552	563	547	528	514
1987–8	527	532	564	594	617	621	630	671	731	913	859	852	676
1988–9	852	792	767	783	783	760	778	739	740	725	708	606	753
1989–90	600	564	570	582	572	585	600	600	620	609	619	626	596
1990–1	628	614	587	591	576	585	592	601	589	583	554	578	590
1991–2	598	568	571	568	577								

Source: Agricultural Marketing Service, U.S.D.A. T.643

Stock Index Futures

The Dow Jones Industrials ended 1991 at an all-time high of 3168.83, up 20.3 percent from its 1990 close at 2633.66. On a total-return basis (including reinvested dividends), the Dow gained 24.5 percent.

These gains were dwarfed by the broader-based averages. The S&P 500 gained 26.3 percent, closing at a record 417.09, and the NASDAQ Composite Index of over-the-counter stocks gained 56.8 percent to close at a record 586.34. Unlike previous bull markets, this one was driven by long-neglected secondary stocks, particularly biotechnology issues. Biotech stocks as a group gained 142.4 percent on the year.

The economy entered 1991 in recession, amid fears that the upcoming war with Iraq would lead to energy shortages. The airline industry did not recover from the effects of higher fuel costs and lower traffic; three U.S. airlines went out of business in 1991 (Eastern, Pan Am and Midway). Nonetheless, the 20-stock Dow Transportation Index closed the year at 1358.00, up 447.77 points or 49.2 percent, in spite of a deficit of $22.99 for the year. The Index components earned $33.18 in 1990.

The rally began in earnest on January 17, when the Dow Industrials gained 114 points, in response to the overwhelming success of the air war against Iraq. Contrary to expectations, oil prices fell during the war, and consumer confidence improved dramatically. In April, the Dow closed over 3000 for the first time. Traders shrugged off dismal first-quarter earnings, concentrating their hopes on lower interest rates and an economic recovery in second-half 1991.

The market's biggest one-day loss of the year, 120 points, came on November 15, when the Senate passed legislation to cap credit card rates. That idea was quickly dropped, and when the Fed cut the discount rate 100 basis points to 3.5 percent on December 20, the Dow took off and gained 254.47 points over the year's remaining seven trading days (despite announcements of thousands of layoffs at GM and IBM).

The New York Stock Exchange Composite Index closed the year at 229.44, up 27.1 percent, while the American Stock Exchange Composite gained 28.2 percent to close at 395.05. The new S&P Midcap Index (December 31, 1990 = 100) closed the year at 146.59, a gain of 46.59 percent.

Futures Markets

S&P 500 futures and options are traded on the Chicago Mercantile Exchange, which was scheduled to begin trading futures on the S&P Midcap Index of 400 stocks in early 1992. Options on the Midcap Index are traded on the American Stock Exchange. Other U.S. stock index futures include: the NYSE Index, Value Line Arithmetic Index, and the Major Market Index.

Average Open Interest of NYSE Composite Stock Index Futures at New York in Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	11,851	12,725	13,420	13,469	12,534	10,808	11,476	16,863	15,994	11,721	9,688	6,837
1988	5,530	5,760	6,013	6,785	8,372	7,400	7,003	7,668	6,689	6,816	7,600	6,419
1989	6,460	7,211	7,860	7,605	8,001	6,771	6,386	6,247	6,449	7,045	6,491	6,084
1990	6,350	6,098	5,443	4,925	5,129	5,160	4,732	6,079	6,003	5,272	4,983	4,554
1991	4,736	5,720	5,264	5,488	6,190	6,010	5,056	5,997	5,869	5,512	6,438	6,195
1992	5,216											

Source: New York Futures Exchange T.643E

Average Open Interest of KC Value Line Stock Index Futures at Kansas City in Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	10,600	11,155	10,358	6,952	7,306	6,059	4,734	5,748	4,377	4,029	2,918	2,170
1988	1,538	1,655	2,814	3,059	3,266	2,269	1,570	1,389	1,332	1,229	1,564	1,580
1989	1,394	1,189	1,288	1,262	1,421	1,513	1,615	1,710	1,522	1,250	1,200	1,182
1990	1,245	1,355	1,463	1,514	1,544	1,404	1,311	1,297	1,250	1,210	1,325	1,381
1991	1,534	2,211	2,107	2,326	2,384	2,138	1,860	1,884	1,764	1,509	1,857	2,100
1992	2,127											

Source: Kansas City Board of Trade T.643F

Average Open Interest of Maxi Major Market Stock Index Futures at Chicago (CBT) in Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1987	8,078	8,843	7,627	9,860	8,072	5,860	7,793	10,109	10,794	7,726	4,268	3,464
1988	2,442	2,849	3,901	6,309	8,000	4,890	3,072	2,957	3,591	5,878	4,956	7,206
1989	7,060	6,421	5,554	6,335	6,280	4,130	6,213	5,235	4,043	7,169	4,835	5,552
1990	5,274	4,273	5,261	5,847	7,686	8,773	8,398	6,480	7,837	8,106	7,873	9,891
1991	9,705	9,856	7,894	7,739	7,715	7,130	5,519	5,501	5,042	4,296	3,877	5,118
1992	5,326											

Source: Chicago Board of Trade T.643H

High, Low & Closing Prices of the December S&P 500 Stock Index Futures at Chicago IMM

Year of Delivery	Yr. Prior - to Del. -	Delivery Year												Life of Delivery Range
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1988 High	—	262.20	273.00	277.50	277.30	267.40	282.10	281.20	278.35	277.70	285.75	282.00	279.80	285.75
Low	—	258.00	252.60	259.70	257.60	252.20	266.50	265.00	258.90	259.25	270.50	263.50	270.70	252.20
Close	—	261.60	271.35	262.20	264.50	266.40	277.60	275.70	264.10	276.40	279.10	273.05	274.35	—
1989 High	—	309.80	313.10	312.80	322.10	333.60	338.00	352.45	358.80	359.85	364.50	347.75	354.90	364.50
Low	—	306.00	298.90	299.60	306.20	314.50	322.00	323.95	344.40	345.50	323.85	332.30	345.80	298.90
Close	—	309.50	301.55	306.65	320.60	330.05	325.00	352.25	356.35	352.70	343.40	347.60	352.08	—
1990 High	—	343.85	350.50	359.00	359.70	373.40	379.50	378.40	363.80	332.20	323.50	324.90	335.50	379.50
Low	—	333.50	334.80	344.00	337.75	340.80	360.00	357.00	308.65	297.30	295.60	302.40	322.60	295.60
Close	—	343.85	345.50	350.90	341.10	371.30	366.85	362.80	326.35	306.75	306.80	324.05	330.35	—
1991 High	342.20	352.80	380.60	381.85	393.50	390.60	391.00	389.05	397.95	398.60	395.85	399.20	420.10	399.20
Low	337.90	316.50	348.30	363.40	372.40	366.50	370.10	372.40	374.85	382.90	377.60	372.10	371.10	316.50
Close	339.10	352.80	375.70	376.25	375.90	389.70	372.25	388.40	395.55	390.30	393.30	375.70	418.20	—
1992 High	—	422.85												
Low	—	408.10												
Close	—	408.60												

Source: Chicago Mercantile Exchange, International Monetary Market. T.643B

High, Low & Closing Prices of the December NYSE Composite Stock Index Futures at N.Y. Futures Exch.

Year of Delivery	Yr. Prior to Delivery	Delivery Year												Life of Delivery Range
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1988 High	144.95	150.15	153.40	155.50	156.60	150.60	159.20	159.00	156.95	156.85	160.75	158.80	157.25	160.75
Low	140.40	137.95	142.55	147.50	145.50	143.30	151.00	149.95	146.70	147.00	152.95	148.45	152.50	137.95
Close	140.75	147.05	152.95	148.50	149.55	150.60	156.90	156.00	149.85	156.15	157.05	153.65	154.15	—
1989 High	163.40	173.00	174.70	174.95	179.75	185.70	188.10	196.10	199.30	199.80	201.95	192.25	196.15	201.95
Low	162.00	160.80	167.45	167.50	172.00	176.25	179.50	180.90	191.70	191.95	176.00	184.20	191.30	160.80
Close	163.40	173.00	168.70	172.15	179.25	183.85	181.25	196.10	197.95	195.90	189.75	192.15	193.75	—
1990 High	202.20	206.50	191.75	195.60	195.55	202.85	206.00	206.00	198.25	182.50	176.80	177.55	183.00	206.50
Low	199.00	185.90	185.50	188.75	185.15	187.00	196.80	195.25	169.25	163.25	161.70	165.00	176.10	161.70
Close	202.20	188.65	188.75	192.20	186.95	202.25	200.15	197.75	178.95	168.50	167.30	177.05	180.50	—
1991 High	186.10	192.25	213.20	211.50	217.60	216.20	215.70	214.50	219.25	219.70	217.70	220.50	230.85	230.85
Low	184.30	174.85	191.00	204.25	207.30	205.00	204.90	205.60	206.25	211.50	208.20	205.70	215.15	184.30
Close	184.65	192.25	204.85	208.75	208.60	216.20	205.45	214.10	218.30	214.50	216.90	207.70	230.85	—

Source: New York Futures Exchange. T.643C

High, Low & Closing Prices of the December Value Line Stock Index Futures at K.C. Board of Trade

Year of Delivery	Yr. Prior to Delivery	Delivery Year												Life of Delivery Range
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1987 High	—	242.50	258.60	272.40	272.10	263.70	270.70	278.70	288.50	285.60	281.70	207.25	202.10	288.50
Low	—	240.00	246.70	258.15	245.80	246.00	255.10	264.30	274.30	266.00	170.00	182.50	179.20	170.00
Close	—	241.85	258.10	261.80	255.90	255.30	263.70	278.00	283.65	278.15	198.00	188.25	201.95	—
1988 High	—	—	—	242.65	245.75	239.55	253.80	255.60	251.60	248.90	251.50	245.90	242.90	255.60
Low	—	—	—	230.80	231.55	227.25	240.70	244.40	236.60	237.00	243.80	230.80	236.50	227.25
Close	—	—	—	234.25	238.70	237.10	253.80	251.20	240.90	247.80	245.10	237.30	241.12	—
1989 High	—	—	275.40	278.90	285.00	294.20	298.80	306.00	311.00	311.05	311.50	290.20	293.00	311.50
Low	—	—	268.20	270.40	275.00	283.35	287.60	287.20	300.30	300.60	271.00	281.55	285.70	268.20
Close	—	—	271.05	275.50	285.00	294.00	289.55	304.25	309.55	306.70	289.15	289.15	286.95	—
1990 High	—	281.75	287.80	295.00	293.65	296.55	302.10	297.20	282.35	251.50	235.50	236.10	244.60	302.10
Low	—	278.25	281.00	280.70	274.95	277.05	287.50	281.50	237.00	217.00	211.70	214.80	234.10	211.70
Close	—	281.75	285.60	289.45	276.05	295.90	292.40	284.30	250.00	226.80	217.75	235.30	240.87	—
1991 High				307.45	320.50	315.50	317.20	314.90	321.80	322.20	324.70	329.10	337.90	337.90
Low				287.20	299.60	296.00	298.00	297.20	296.30	311.10	306.00	308.00	304.50	287.20
Close				305.50	303.35	315.30	299.00	314.80	320.20	319.95	323.60	310.90	337.80	—

Source: Kansas City Board of Trade. T.643A

STOCK INDEX FUTURES

Average Open Interest of S&P 500 Stock Index Futures at Chicago IMM in Contracts

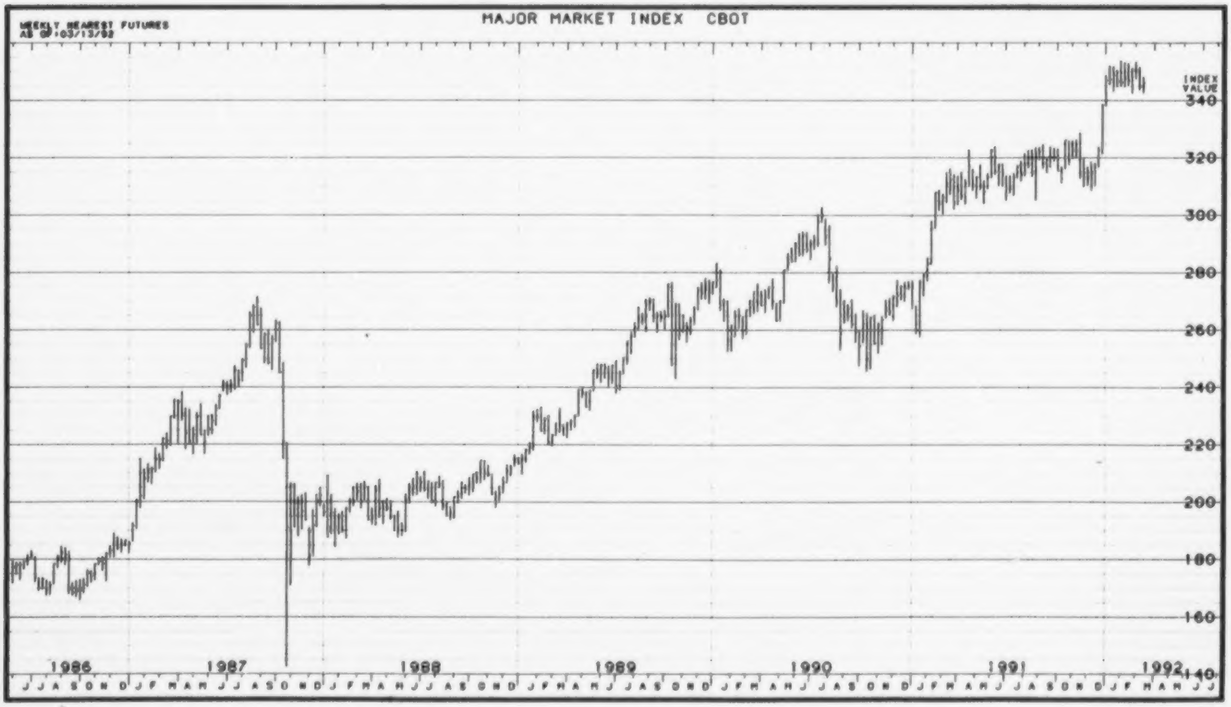
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1986	61,697	73,610	90,736	75,590	93,638	95,400	101,017	109,169	121,724	136,823	144,103	128,305
1987	107,367	116,765	119,444	110,154	127,090	131,406	115,722	127,385	128,930	139,741	141,059	130,387
1988	115,006	120,909	114,792	114,269	129,134	116,524	104,644	118,008	120,657	121,970	137,715	131,134
1989	129,453	136,285	137,068	136,664	140,627	128,578	116,935	129,989	129,949	126,039	126,444	117,875
1990	112,196	124,279	124,460	118,350	127,718	118,865	113,050	132,568	159,607	151,990	157,440	160,260
1991	148,112	168,803	158,994	148,106	157,103	154,848	142,665	152,067	151,609	144,279	153,898	145,324
1992	147,434											

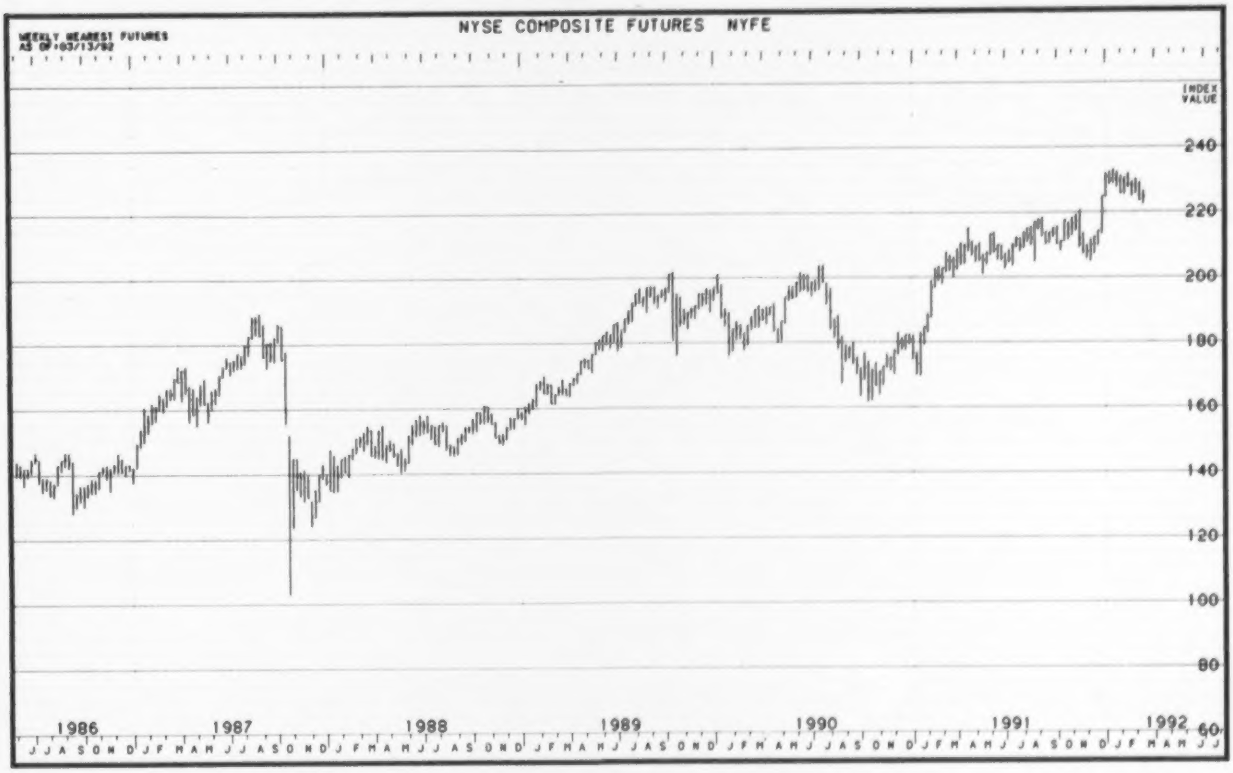
Source: International Monetary Market (Chicago) T.643D

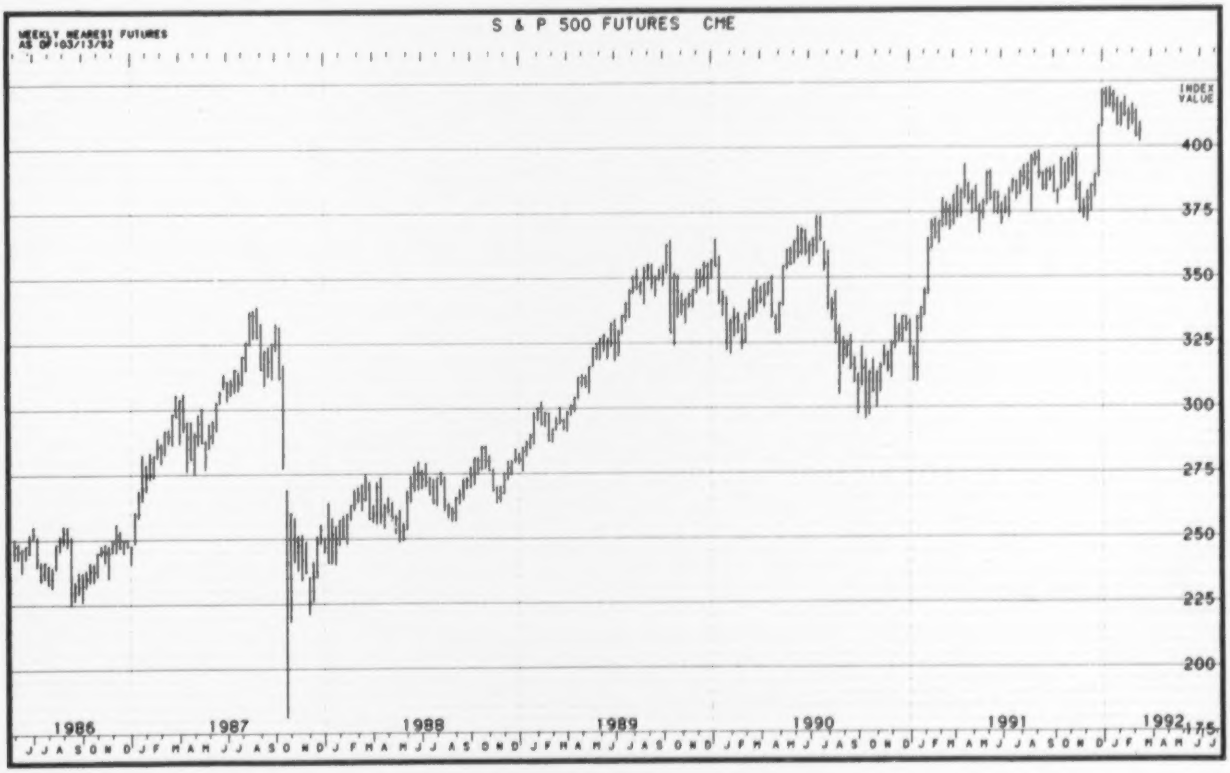
High, Low & Closing Prices of the September Major Market Maxi Stock Index Futures at Chicago BOT

Year of Delivery	Delivery Year									Life of Delivery Range
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1987 High	—	—	—	477.50	472.00	486.60	500.60	543.30	535.50	543.30
Low	—	—	—	439.00	436.50	450.00	476.30	494.30	495.70	436.50
Close	—	—	—	452.00	453.60	476.90	499.75	530.40	497.18	—
1988 High	—	—	392.50	416.50	401.20	422.00	422.20	419.10	413.90	422.20
Low	—	—	386.50	387.50	377.70	398.50	398.50	387.40	388.50	377.70
Close	—	—	391.00	398.00	397.90	416.20	414.30	395.90	409.66	—
1989 High	—	—	—	—	—	501.40	522.20	541.50	542.50	542.50
Low	—	—	—	—	—	479.30	481.40	517.00	518.30	479.30
Close	—	—	—	—	—	483.10	522.10	537.15	522.85	—
1990 High	—	—	—	—	—	594.00	608.50	592.80	541.50	608.50
Low	—	—	—	—	—	573.30	581.00	506.00	511.50	506.00
Close	—	—	—	—	—	583.90	590.30	532.75	518.70	—
1991 High			316.25	322.65	322.88	323.80	319.90	323.65	324.60	324.60
Low			300.88	303.90	303.88	305.30	306.88	305.35	314.75	300.88
Close			308.70	307.80	322.35	307.23	319.08	322.33	321.38	—

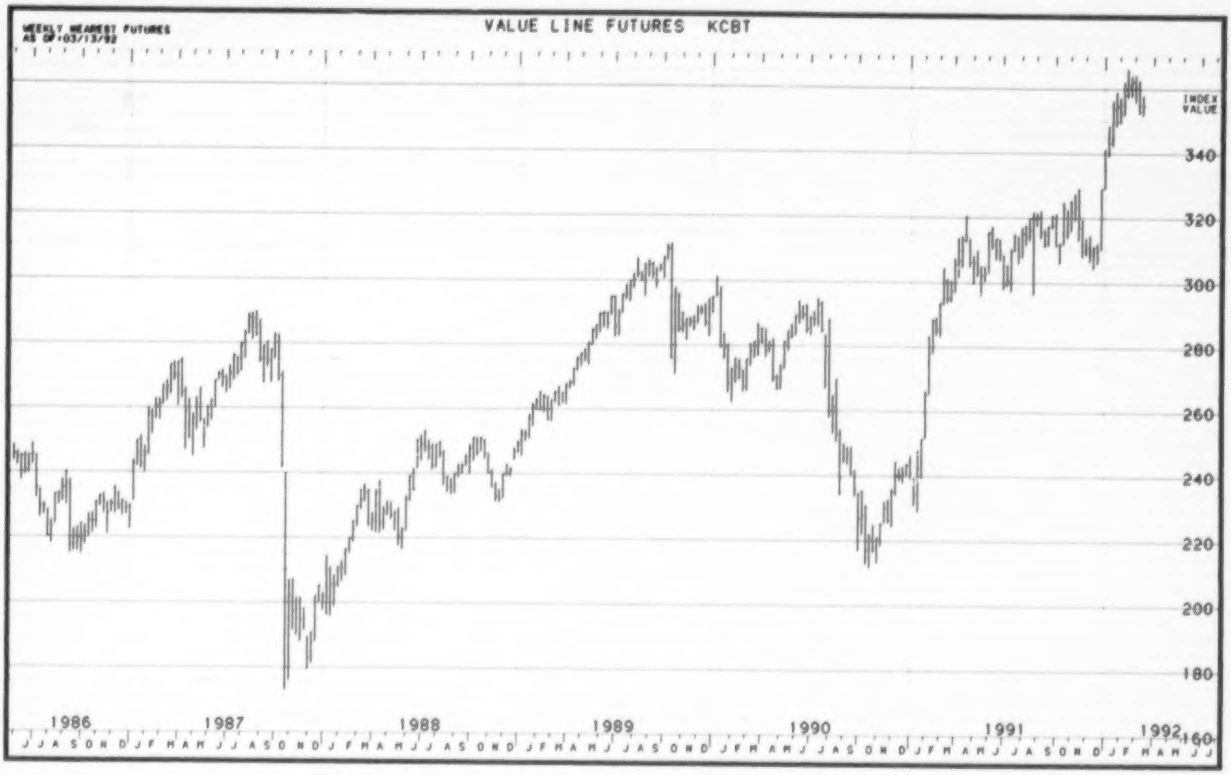
Source: Chicago Board of Trade T.643G

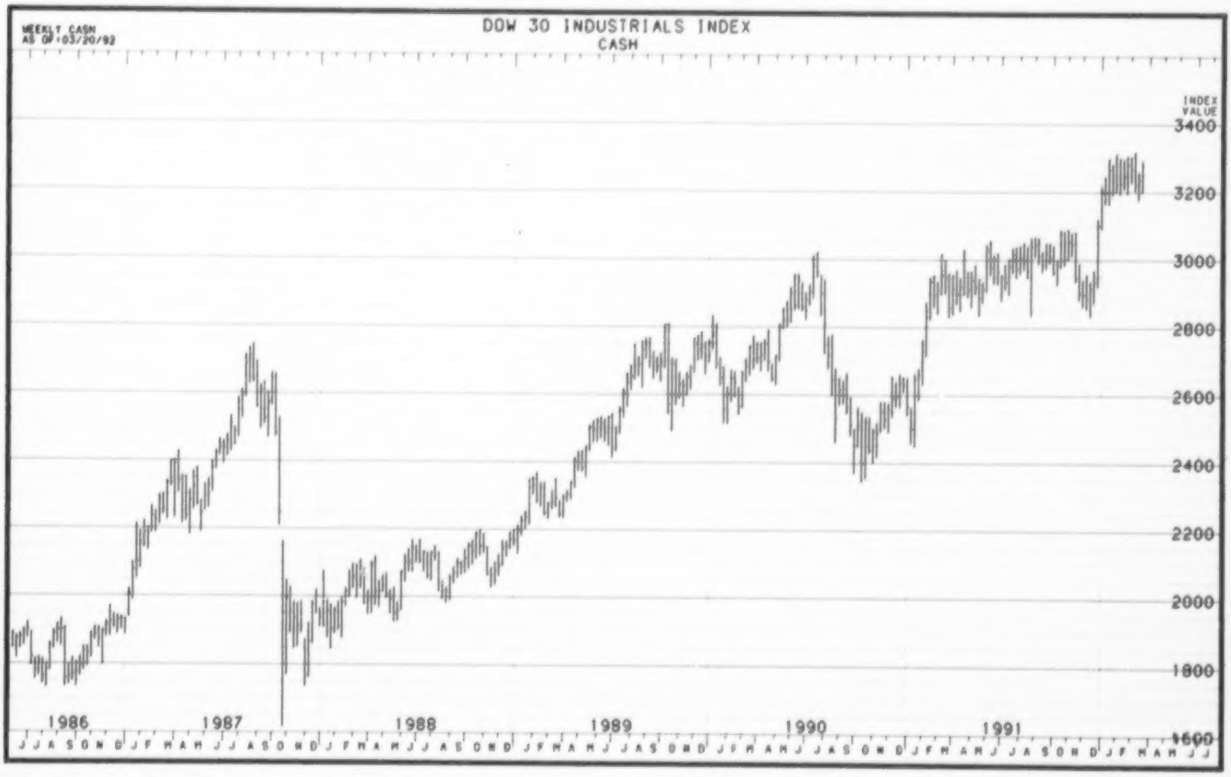


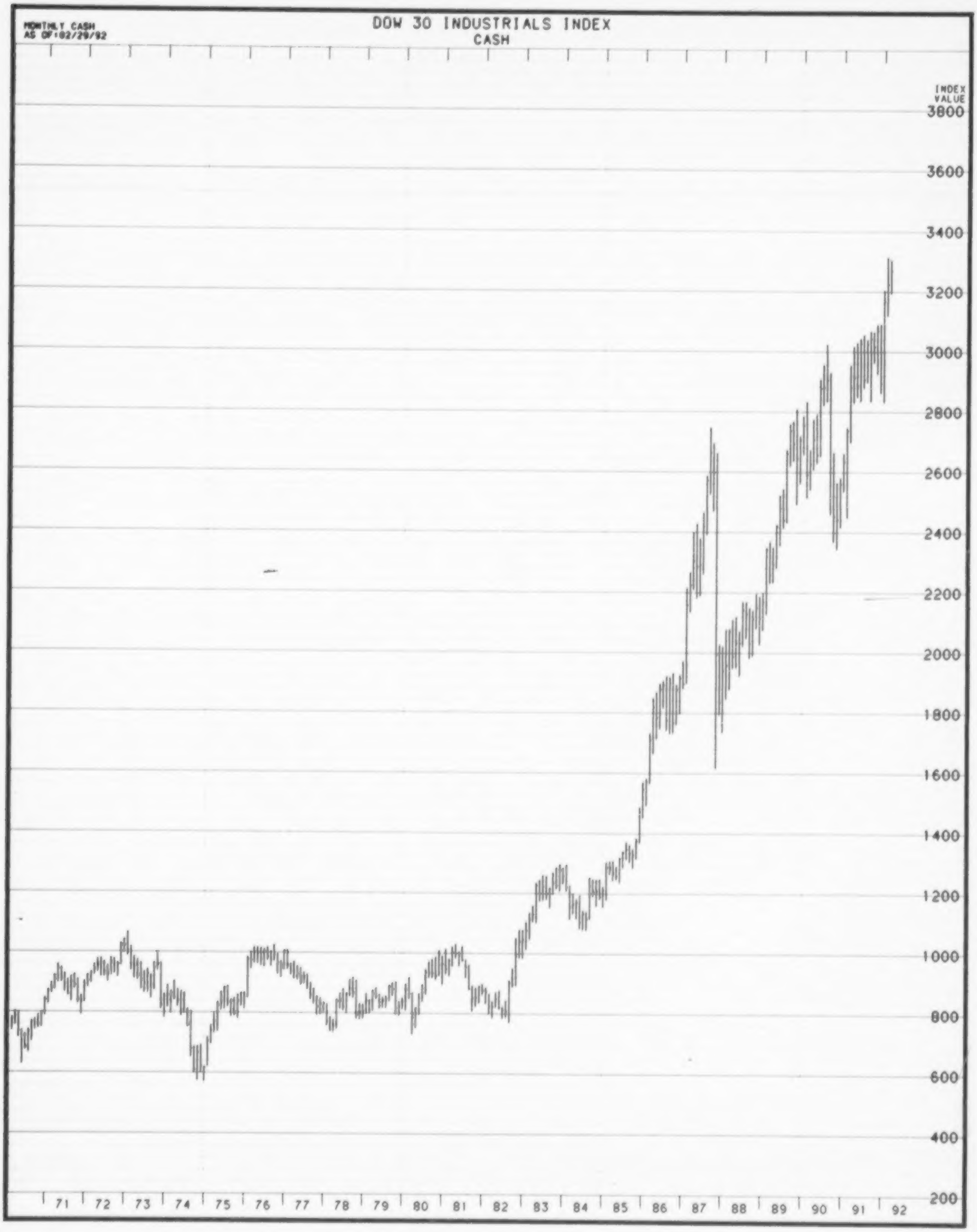

NYSE COMPOSITE FUTURES NYFE
WEEKLY NEAREST FUTURES
AS OF:03/13/92
INDEX VALUE
240
220
200
180
160
140
120
100
80
60
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J


S & P 500 FUTURES CME
WEEKLY NEAREST FUTURES
AS OF:03/13/92
INDEX VALUE
400
375
350
325
300
275
250
225
200
175
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J

STOCK INDEX FUTURES






MONTHLY CASH
AS OF:02/29/92
DOW 30 INDUSTRIALS INDEX
CASH
INDEX VALUE
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92

Stock Index Futures, Worldwide

The world's equity markets weathered two major developments during 1991: 1.) the uncertainties of the Persian Gulf war and its quick settlement, and 2.) the events in the USSR that triggered a short coup and ultimately the dissolution of the country as a single entity.

Of greater importance were the variables affecting individual stock markets, specifically the progress of their own economies and ways to promote growth and/or contain inflation. On a worldwide basis, 1991 was mostly a good year for equities, and the major U.S. markets pushed into historic high ground by year-end, setting a positive tone for many of the world's markets at the start of 1992.

For 1991, the Dow Jones 30 Industrials rose 20 percent, with most of the gain during the first two months and a very strong year-end finish. For the nine months in between, the Dow trended indecisively near the 3000 level, and showed signs of slippage in November on fears a double-dip recession might occur. The latter perception faded with a decisive lowering of interest rates by the Federal Reserve just prior to Christmas. The Dow's full-year action, however, was not necessarily indicative of the performance of other U.S. equity markets. The Nasdaq Composite Index had its best year ever, rising 57 percent, while on a relative basis, the Russell 2000 outperformed the S & P 500 by at least 20 percent. The divergence in the indices, which favored those with a composition focused more on lower-priced, perhaps less-seasoned companies, was significant in that it reflected an increase in speculative participation, partly owing to declining interest rates, which enhanced the appeal of equities. The overall action was bullish and seemingly removed from the uncertainties overhanging the economy.

Overseas, most Asian markets, with the notable exception of Japan's Nikkei, were the world's strongest during 1991. The key European markets lagged, while Canada's equity markets faltered.

The Nikkei 225 closed 1991 at 22983.77, versus 23848.71 a year earlier and well under the record high of 38915.87 at the end of 1989. Significantly, only once before in its post World War II history had the Nikkei finished the year under its year-earlier level twice in a row. Daily trading volume dropped sharply, but was still large relative to U.S. levels. Tight money policies by the Bank of Japan and a burst in the easy-money bubble curbed the speculative excesses for equities. A major stock scandal in mid-1991, which had no parallel in Japan's financial history, contributed to the pressure on the Nikkei. The outlook for 1992 was positive, if capital from Japanese corporations once again flowed into the market, which was likely to depend on Japan's monetary policy.

Hong Kong's Hang Seng Index soared 42 percent in 1991 to close at 4297.33, reflecting the island's strong economy and optimism for improved relations with China. Growth of 5 percent in the economy was expected in 1992 as export trade expanded, likely offsetting any slowdown in China's economy. Though inflation was expected to remain high at 10 percent, the momentum carried the Hang Seng to above 5000, a record, in early 1992.

Taipei's market rose only 1.6 percent in 1991, but it was a needed pause following the market's collapse in 1990. Taiwan's economy, however, was strengthening, suggesting that equity values might improve by perhaps 15 percent during 1992.

In Australia, the All Ordinaries Index climbed 29 percent during 1991, closing at 1651.4 and erasing the 22.4 percent decline of 1990. The market's resurgence came despite a weak domestic economy and expectations of a 1992 growth rate likely to be one of the lowest in the Asia-Pacific region. Still, an easier monetary policy was seen as the engine that could drive the index over 2000 during 1992.

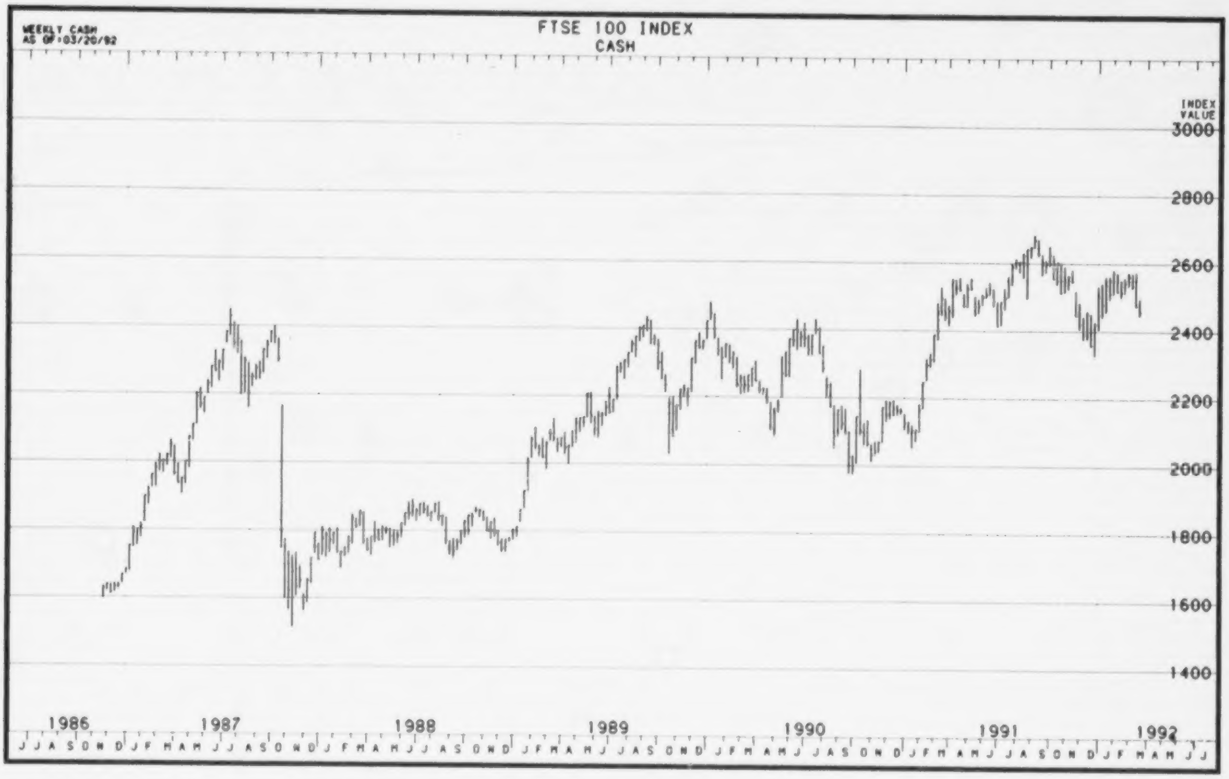
In London, the Financial Times-Stock Exchange 100-Share Index peaked in September at 2683.7, reflecting signs, although premature, that Britain's economy was coming out of recession. By year-end, fresh recession fears and uncertainty as to the Conservative Party's staying power dropped the FT-SE to about 2400. The outlook for London equities in 1992 focused on which political party would be in power by year-end.

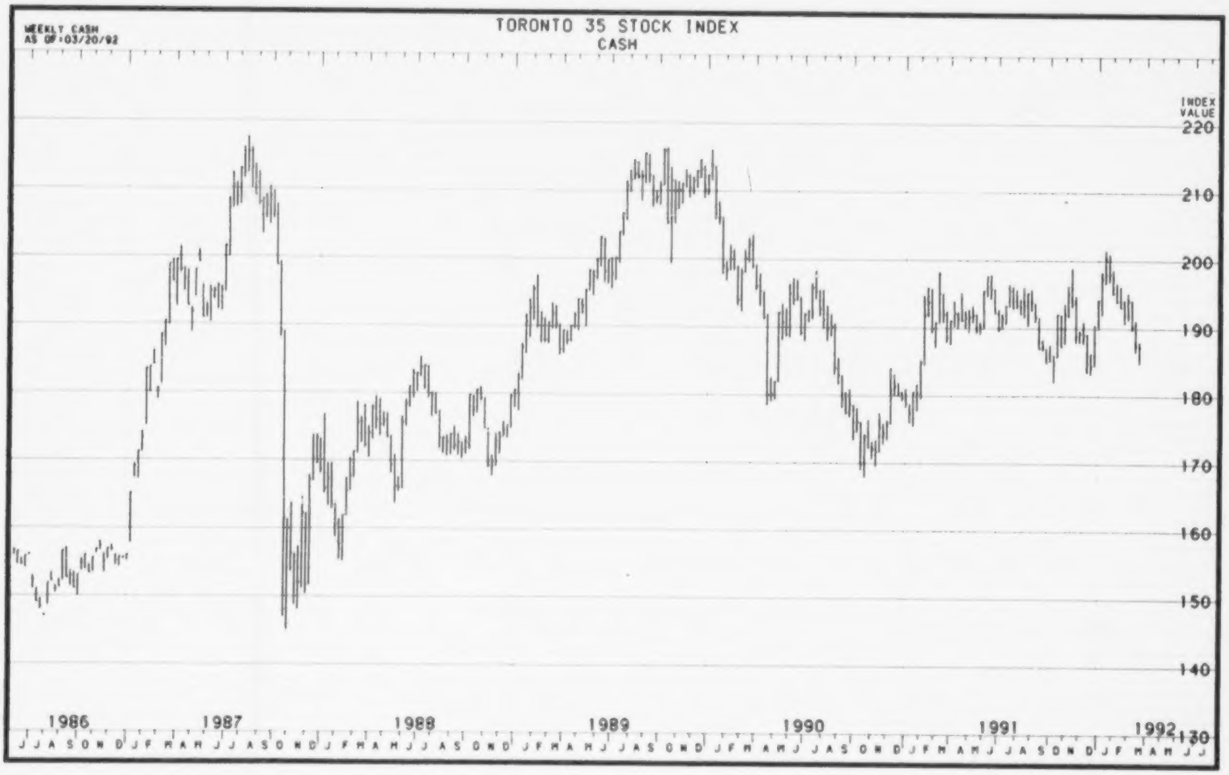
Germany's DAX index strengthened in first-half 1991 by 24 percent to 1728. By year-end, the DAX was at 1577. A midyear tax increase, rising interest rates, and a slowing economy contributed to the slide in equity values. The key to a market recovery in 1992 was likely to be interest rates, some easing of which might enhance demand for equities relative to capital assets with fixed yields.

The French CAC 40 Index rose 16 percent in 1991, closing at 1765.66, down somewhat from the record high hit in September. The economy turned sluggish, although France's inflation rate midyear dipped to an annualized 3.4 percent, lower than Germany's rate for the first time in eighteen years, setting the stage for the CAC 40's run to new highs by late summer.

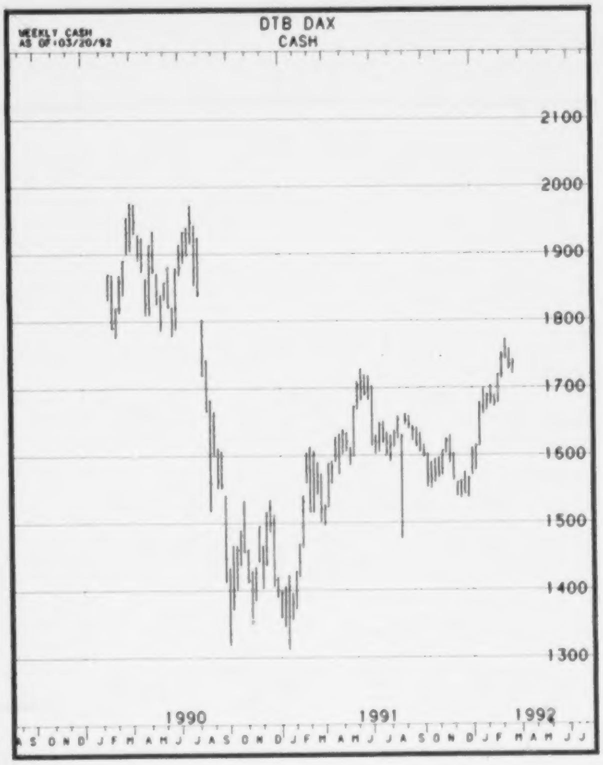
The Zurich exchange accounts for most of the Swiss equity dealings, where during 1991 prices fell on average about 3 percent in sluggish trading. A more positive outlook was likely for 1992, owing to an upturn in international trade.

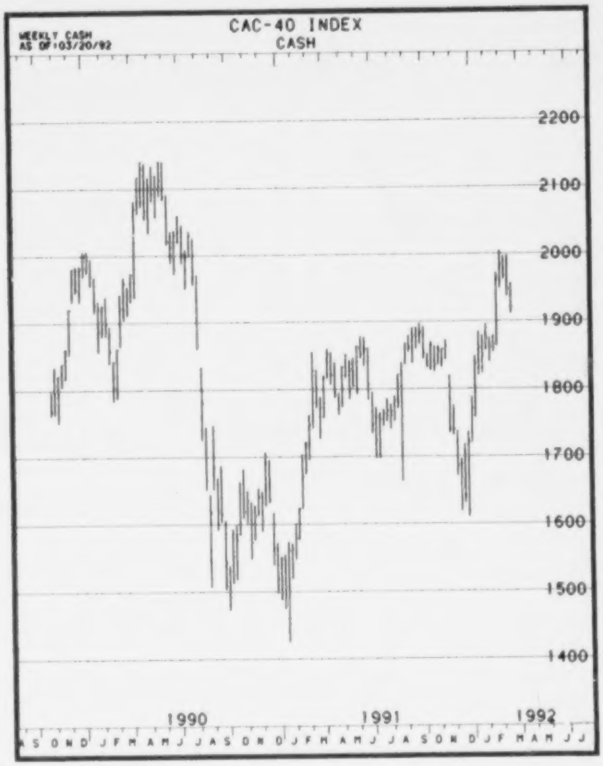
Canada's economy slipped in 1991, and corporate earnings were basically flat, as were prices on the Toronto Exchange, where the 300 stock Composite Average closed the year at 3512.36, up 8 percent. For most of the year, the average hovered in the 3400-3600 range, with a peak of 3604 set in November. Canada's other exchanges turned in lackluster performances in 1991; the Montreal Portfolio Index rose 8 percent, while Vancouver's index increased only 4 percent.

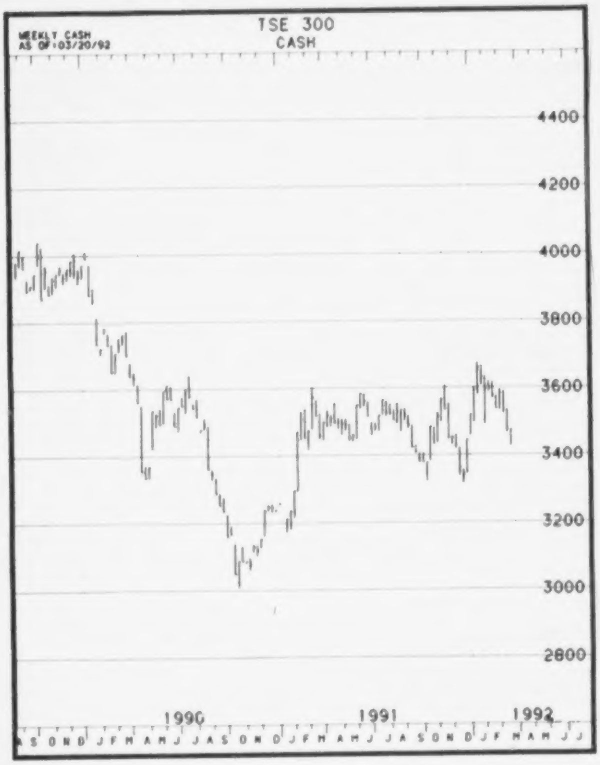

WEEKLY CASH
AS OF:03/20/92
FTSE 100 INDEX
CASH
INDEX VALUE
3000
2800
2600
2400
2200
2000
1800
1600
1400
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J

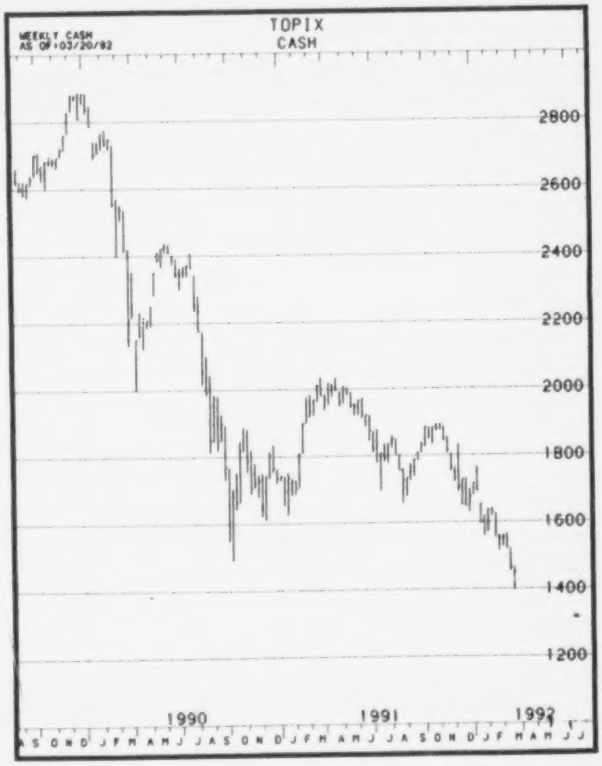

WEEKLY CASH
AS OF:03/20/92
TORONTO 35 STOCK INDEX
CASH
INDEX VALUE
220
210
200
190
180
170
160
150
140
130
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J

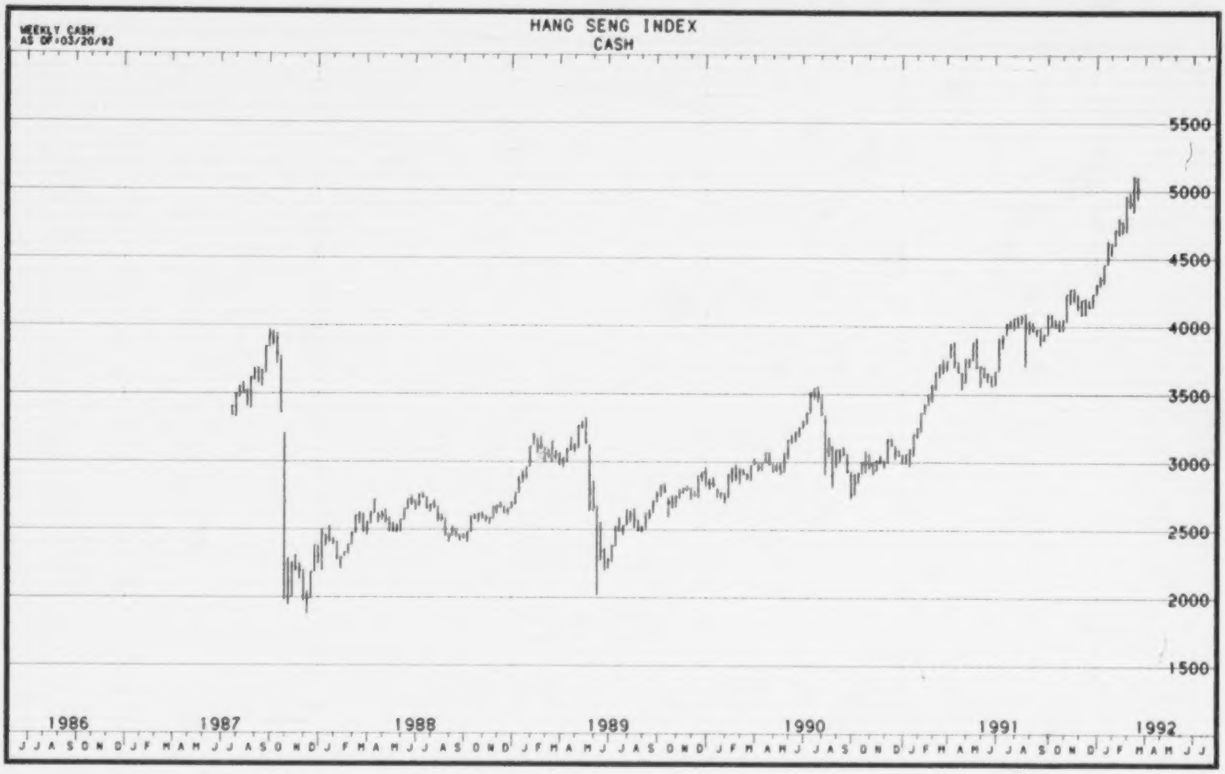
STOCK INDEX FUTURES, WORLDWIDE

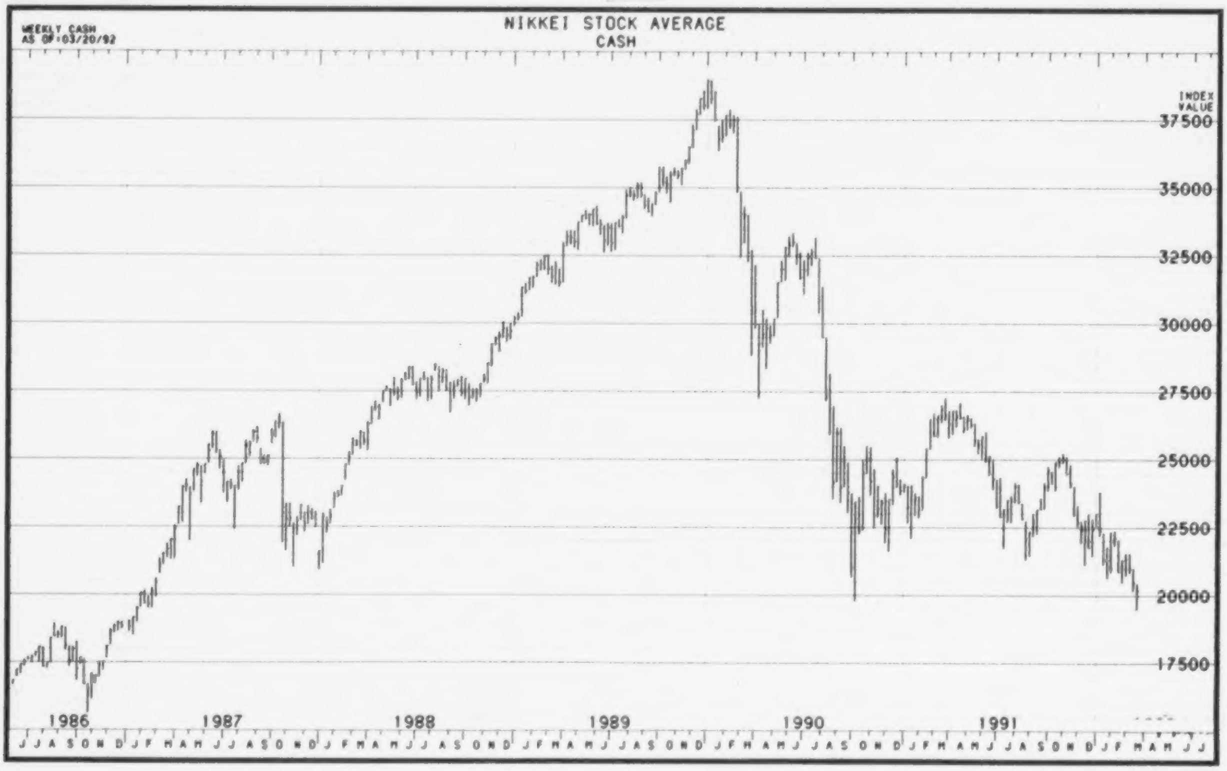









WEEKLY CASH
AS OF:03/20/92
HANG SENG INDEX
CASH
5500
5000
4500
4000
3500
3000
2500
2000
1500
1986
1987
1988
1989
1990
1991
1992
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J


WEEKLY CASH
AS OF:03/20/92
NIKKEI STOCK AVERAGE
CASH
INDEX
VALUE
37500
35000
32500
30000
27500
25000
22500
20000
17500
1986
1987
1988
1989
1990
1991
J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J

Sugar

World sugar production in 1991/92 (Sept.-Aug.) reached a record 113.2 million tonnes, raw value, versus the previous peak of 112.8 million in 1990/91. Global consumption increased to a record 112.1 million tonnes, lagging output by about one million tonnes. World stocks, projected at 23.2 million tonnes at the end of the 1991/92 season, were to be the highest since 1986/87. The statistical imbalance weighed on world prices during most of 1991, with raw sugar averaging 8.7 cents a pound (FOB, Caribbean) in the first half of 1991, one-third below the 14.5 cents averaged in the same 1990 period.

Per capita sugar consumption worldwide has dipped in the past few years, and totaled 20.5 kilograms in 1990/91, versus 20.6 the previous year, despite income growth and policies in developing countries that maintain cheap sugar prices. In the developed countries, dietary factors have cut into sugar's use.

Cane sugar accounts for about two-thirds of world output and was a record 72.5-73 million tonnes in 1991/92. Beet sugar production slipped to about 40 million tonnes.

The former USSR accounted for almost one-fourth of beet production in the 1980s, but its share slipped in 1991/92, as the raw sugar crop fell to about 9 million tonnes. West Germany and France are the next major beet producers, together providing nearly 10 million tonnes of the almost 17 million produced by the EC. In Eastern Europe, beet production in 1991/92 of about 4.3 million tonnes was below the peak in the mid-1980s of 4.9 million, with Poland the top producer.

Cane sugar production is less costly than beet. Asia produces almost half of the cane crop, followed by South America (15-20 percent), and the Caribbean (10-15 percent). Individually, India is the largest producer with a record crop of 13.5 million, raw value, in 1991/92. Brazil's crop was an average 7.85 million tonnes in the past few years, and Cuba was running close behind. China produced a record 7 million tonnes in 1991/92, compared with less than 3 million a decade earlier. Thailand was also coming along fast with an outturn of 4 million tonnes in 1991/92, reflecting a two-fold increase in production during the 1980s. Thailand is pivotal to world prices, as about two-thirds of the Thai crop is exported, and the more sugar that's available for export, the greater the downward pressure on world prices.

Soviet beet production and import demand are also critical for world prices. The import needs of the former USSR were expected to rise to 4.6 million tonnes in 1991/92, although how it was to be paid for was a question. The trade pacts between Cuba and the new nations of the former USSR brought some changes to the market, since Cuba had been recieving four times the world sugar price, paid in oil, from the USSR. The new deals were at market prices.

Developing countries account for almost 60 percent of world consumption, developed countries about 25 percent, and the former Red Bloc about 15 percent. India has been shifting to more centrifugal sugar usage from the traditional sweetener, gur.

World sugar trade, having peaked at about 31 million tonnes in the early 1980s, fell to about 27.6 million in 1991/92. Five nations account for almost 70 percent of global exports. Cuba is the largest exporter, followed by the EC. Some five nations account for almost 50 percent of all imports. The chief importers are the former USSR and the EC. The recent slippage in trade reflects a push by many nations to become more self-sufficient through their own production.

Estimated U.S. production in 1991/92 (Oct.-Sept.) of 7.38 short tons compared with the previous year's 6.93 million. Beet sugar accounted for more than 50 percent of the total, and was 3.9 million tons in 1991/92, with Minnesota the leader, followed by California and Idaho. New molasses desugaring facilities in a number of beet states were likely to enhance beet sugar output. Florida was the leading cane producer, followed by Hawaii.

The U.S. usually obtains at least 20 percent of its sugar from imports--1.5 million tons in 1991/92 and 2.3 million in 1990/91--with the amount dependent on a quota system that typically includes forty or more exporting nations. The Philippines, Australia and Brazil are the major suppliers. The U.S. exports a small amount of sugar, much of which is foreign sugar that was refined in the U.S.

U.S. consumption since the late 1980s has grown about 2.3 percent annually, because of strong demand for sugar in commercially prepared foods. Competition among the various sweeteners, especially in the soft drink industry, the largest industrial user, was likely to intensify in the 1990s.

Domestic raw sugar prices averaged under 22 cents in mid-1991, while refined prices fell from about 27 cents to under 26 cents; both were under year-earlier levels. U.S. sugar prices are supported by the USDA's Commodity Credit Corporation. In mid-1991, the CCC announced that the national 1991 average price for cane sugar was 18 cents/lb. and beet sugar 22.5 cents.

U.S. beet production costs for the 1990 crop averaged $790 per planted acre, compared with $937 for cane.

Futures Markets

World raw and white and domestic raw sugar futures are traded on the New York Coffee, Sugar and Cocoa Exchange (CSCE). World raw and white sugar futures are listed on the London Futures and Options Exchange. White sugar futures are traded in Paris. Options on the world raw contract are traded on the CSCE, and options are traded on the London FOX.

World Sugar Production, Supply & Stocks/Consumption Ratio In Thousands of Metric Tons (Raw Value)

Marketing Year	Beginning Stocks	Production	Imports	Total Supply	Exports	Domestic Consumption	Ending Stocks	Stocks/% Consumption
86/87	25,904	103,356	27,375	156,635	28,116	105,151	23,368	22.2
87/88	23,368	103,347	27,639	154,354	27,801	105,843	20,710	19.6
88/89	20,710	105,485	29,084	155,279	28,939	106,588	19,752	18.5
89/90	19,840	108,164	28,659	156,663	29,307	107,566	19,790	20.6
90/91[1]	19,790	112,776	28,385	160,951	29,353	109,274	22,324	20.5
91/92[2]	22,324	113,234	27,318	162,876	27,577	112,127	23,172	

[1] Estimate. [2] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.*

United States Sugar (Cane & Beet) Supply and Utilization In Thousands of Short Tons (Raw Value)

	Supply								Utilization						
	Production			Offshore Receipts									Domestic Disappearance		
														Military & Civilian	
Year	Cane	Beet	Total	Foreign	Territories	Total	Beginning Stocks	Total Supply	Total Use	Exports	Net Changes in Invisible Stocks	Refin. Loss Adjust.[3]	Imp. Blends & Mixtures	Total	Per Capita
1984	2,831	3,059	5,890	3,444	24	3,468	2,570	11,928	8,923	447	–18	58	8	8,428	66.66
1985	3,098	2,869	5,967	2,797	36	2,833	3,005	11,805	8,678	487	–69	122	15	7,997	62.73
1986	3,066	3,201	6,267	2,395	31	2,426	3,126	10,216	8,564	507	51	28	30	7,711	60.05
1987	3,410	3,899	7,309	1,767	12	1,779	3,225	10,316	8,819	599	145	18	27	8,040	62.37
1988	3,429	3,658	7,087	1,272	19	1,291	3,195	9,934	8,618	440	–58	12	9	8,079	62.06
1989	3,351	3,490	6,841	2,050	12	2,062	3,132	10,090	8,866	516	–10	38	6	8,203	62.76
1990[1]	2,851	3,484	6,335	2,568	0	2,568	2,946	10,405	9,195	614	–13	43	8	8,405	64.46
1991[2]	3,476	3,869	7,345	2,866	0	2,866	2,729	11,006	9,410	620	—	45	8		64.90

[1] Preliminary. [2] Estimate. [3] Residual. [4] Forecast. *Source: Agricultural Marketing Service, U.S.D.A.* T.645

Sugar Cane for Sugar & Seed and Production of Cane Sugar and Molasses in the United States

			Production					Farm Value		Sugar Production			Molasses Made	
										Raw Value				
Year	Acreage Harvested 1,000 Acres	Yield of Cane per Har. Acre Tons	for Sugar	for Seed	Total	Sugar Yield per Acre Sh. Tons	Farm Price $ per Ton	of Cane used for Sugar	of Cane used for Sugar & Seed	Total 1,000 Tons	Per Ton of Cane Lbs.	Refined Basis 1,000 Tons	Edible	Total
			1,000 Tons					1,000 Dollars					1,000 Gallons[3]	
1984	747	36.6	26,008	1,332	27,340	4.29	28.20	734,026	769,934	3,007	231	2,811	2,070	175,573
1985	770	36.6	26,877	1,336	28,213	4.20	26.70	717,690	751,550	3,033	226	2,835	1,650	178,539
1986	796	38.1	28,936	1,375	30,311	4.37	27.30	788,678	824,724	3,281	227	3,066	1,700	185,970
1987	824	35.5	28,026	1,192	29,218	4.28	29.30	822,376	857,415	3,333	238	3,115	1,630	183,866
1988	845	35.4	28,479	1,425	29,904	4.28	29.30	834,435	876,187	3,398	239	3,176	1,550	191,208
1989[1]	852	34.5	28,069	1,357	29,426	3.95				3,176	226	2,967		194,731
1990[2]	794	35.4	26,475	1,661	28,136	4.34				3,152	238	2,945		178,273
1991[2]	899	33.7	29,002	1,255	30,257	4.01				3,297		3,081		186,905

[1] Preliminary. [2] Estimate. [3] Excludes edible. *Source: Statistical Reporting Service, U.S.D.A.* T.646

U.S. Sugar Beets, Beet Sugar, Pulp, & Molasses Produced from Sugar Beets & Raw Sugar Spot Prices

	Sugar Beets							Sugar Production		Raw Sugar Prices			
	Acreage										Cof., Sugar Exch.		
Year of Harvest	Planted	Harv.	Yield Per Har. Acre Tons	Production 1,000 Tons	Sugar Yield per Acre Sh. Tons	Price[1] Dollars	Farm Value $1,000	Refined Basis	Equivalent "Raw Value"[2]	World[4] Intern. Agreem.	#11 World	N.Y. Duty Paid	Wholesale List Price HFCS (42%) Midwest
	1,000 Acres							1,000 Sh. Tons		Cents Per Lb.			
1984	1,124	1,096	20.2	22,134	2.65	33.90	750,162	2,715	2,905	5.21	5.18	21.74	19.94
1985	1,125	1,103	20.4	22,529	2.72	33.80	761,236	2,835	3,033	4.06	4.04	20.34	17.75
1986	1,232	1,192	21.1	25,162	2.87	35.90	902,199	3,066	3,281	6.04	6.05	20.95	18.07
1987	1,267	1,252	22.4	28,072	3.19	38.20	1,073,584	3,115	3,333	6.75	6.71	21.83	16.50
1988	1,327	1,301	19.1	24,810	2.70	41.10	1,019,691	3,176	3,398	10.10	10.17	22.12	16.47
1989[3]	1,324	1,295	19.4	25,131	2.66			3,217	3,442		12.79	22.81	19.24
1990[5]	1,400	1,377	20.0	27,513	2.79			3,591	3,842		12.55	23.26	19.69
1991[5]	1,409	1,389	20.1	27,848	2.83			3,489	3,733		9.12	21.62	22.46

[1] Includes support payments, but excludes Sugar beet payments. [2] Refined sugar multiplied by factor of 1.07. [3] Preliminary. [4] International Sugar Agreement, World Price. [5] Estimate. *Source: Statistical Reporting Service, U.S.D.A.* T.647

SUGAR

Raw Sugar N.Y. Spot Price (C.I.F., Duty/Fee Paid, Contract #12 & #14) In Cents per Pound

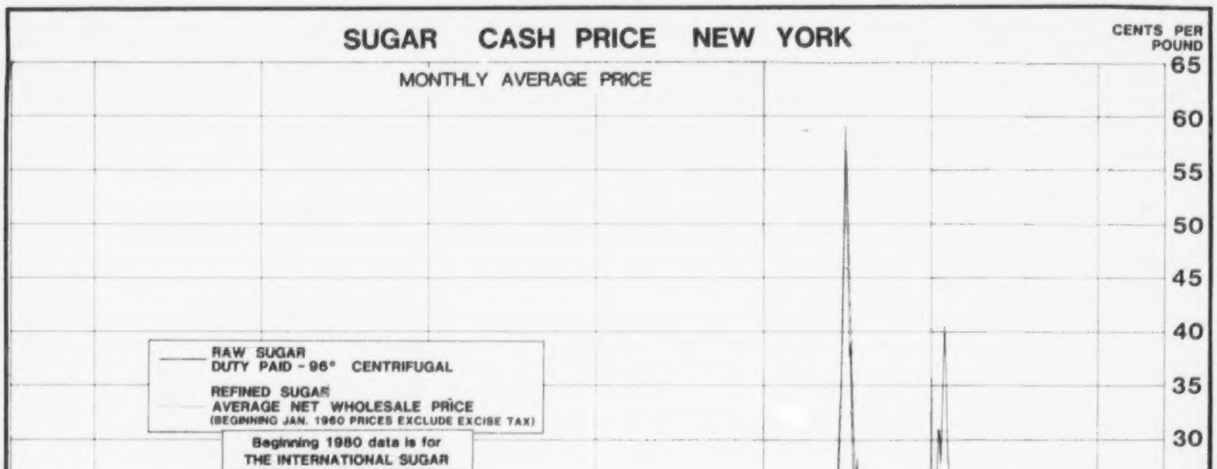
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	21.51	21.90	22.00	22.03	22.01	22.06	21.89	21.72	21.70	21.56	21.40	21.10	21.74
1985	20.72	20.38	20.91	20.97	21.09	21.27	21.23	20.59	19.51	18.68	18.89	19.89	20.34
1986	20.67	21.01	20.95	20.85	20.88	20.99	20.97	20.87	20.87	21.08	21.17	21.12	20.95
1987	21.50	21.76	21.76	21.81	22.01	22.06	22.07	21.88	21.88	21.69	21.75	21.76	21.83
1988	21.83	22.11	22.16	22.16	22.13	22.54	23.43	21.90	21.77	21.74	21.70	21.99	22.12
1989	21.88	22.07	22.12	22.30	22.45	22.99	23.56	23.57	23.50	23.14	23.24	22.84	22.81
1990	23.11	22.93	23.58	23.81	23.58	23.33	23.42	23.27	23.23	23.29	23.15	22.47	23.26
1991	21.86	21.42	21.46	21.23	21.29		21.25	21.83		21.76	21.75		

Sources: Economic Research Service, U.S.D.A.; N.Y. Coffee & Sugar Exchange T.648

World Production of Sugar (Centrifugal Sugar–Raw Value) In Thousands of Metric Tons

Crop Year	Australia Cane	Brazil Cane	Mainland China	Cuba Cane	South Africa Cane	India Cane	Indonesia Cane	Philippines Cane	Poland Beet	Germany	Thailand	United States	USSR Beet	Mexico	France	World All
1982–3	3,535	9,300	4,132	7,200	2,256	9,508	1,731	2,521	2,009	3,591	2,305	5,359	7,392	3,078	4,833	101,342
1983–4	3,414	9,400	3,825	8,330	1,462	7,042	1,762	2,381	2,141	2,726	2,305	5,275	8,700	3,242	4,153	96,542
1984–5	3,548	9,300	4,627	8,100	2,514	7,071	1,709	1,767	1,878	3,146	2,533	5,289	8,587	3,436	4,301	100,183
1985–6	3,404	8,100	5,535	7,200	2,287	7,983	1,728	1,561	1,811	3,430	2,586	5,473	8,260	3,928	4,297	98,938
1986–7	3,457	8,650	5,774	7,220	2,289	9,474	2,024	1,350	1,891	3,469	2,639	6,246	8,700	3,970	3,707	103,271
1987–8	3,528	8,457	4,706	7,400	2,165	10,000	2,127	1,400	1,823	2,968	2,704	6,483	9,560	3,806	3,966	103,270
1988–9	3,680	8,582	5,312	8,100	2,240	10,150	1,889	1,600	1,825	3,003	4,055	6,089	8,900	3,678	4,372	105,485
1989–90	3,797	7,793	5,618	8,000	2,289	12,085	2,080	1,750	1,865	4,087	3,502	6,008	9,530	3,100	4,204	108,222
1990–1[2]	3,515	7,900	6,600	7,800	2,165	12,920	2,130	1,770	2,174	4,670	3,900	6,350	9,160	3,400	4,744	112,886
1991–2[1]	3,690	7,900	6,800	7,800	2,265	12,700	2,180	1,900	1,750	4,600	4,000	6,622	9,000	3,450	4,480	112,594

[1] Estimated. [2] Preliminary. *Source: Foreign Agricultural Service, U.S.D.A.* T.644



United States Production & Imports of Edible Syrups In Thousands of Gallons

Year	Production[2] Syrups Corn	Maple	Refiners'	Edible Molasses	Honey	Total	Imports Maple Syrup	Edib. Molas. & Cane Syrup	Honey	Total
1983	1,334,557	1,150	1,000	1,850	17,314	1,355,871	1,287	2,336	9,277	12,900
1984	1,501,377	1,366	950	2,070	13,936	1,519,699	1,248	3,495	10,869	15,612
1985	1,721,980	1,325	1,100	1,650	12,669	1,738,724	1,323	4,164	11,676	17,163
1986	1,726,348	937	1,000	1,700	16,925	1,745,910	1,672	8,095	10,000	19,767
1987	1,780,607	791	750	1,630	19,154	1,802,932	1,476	6,905	4,921	13,302
1988	1,824,168	1,168	500	1,925	18,083	1,845,844	1,293	7,295	4,724	13,312
1989[1]	1,846,605	1,214	250	1,990	14,299	1,864,358	1,623	4,762	6,526	12,911
1990[3]		1,088								

[1] Preliminary. [2] Production of cane syrup, sorghum syrup, & edible molasses is of the fall of the preceding year. [3] Estimate.
Source: Agricultural Marketing Service, U.S.D.A.

T.652

U.S. Exports & Domestic Consumption of Edible Syrups, Corn Sugar & Sugar In Thousands of Gallons

Year	Exports Corn Syrup	Exports Honey	Exports Total	Indicated Domestic Consumption Syrups Corn	Maple	Cane & Refin. & Edib. Mol.	Honey	Total	Per Capita Consumption in Pounds Corn Sweeteners[2]	Caloric Sweeteners	Aspartame	Saccharin	Sugar U.S. Grown	Sugar Cane	Sugar Total	Total All Sweeteners
1983	1,223	630	1,853	1,333,334	2,437	5,186	25,961	1,366,918	52.6	130.4	3.5	9.5	48.0	47.1	71.0	137.6
1984	656	627	1,283	1,500,721	2,614	6,515	24,178	1,534,028	58.8	129.7	5.8	10.0	42.7	45.0	67.6	142.5
1985	534	549	1,083	1,721,446	2,648	6,914	23,796	1,754,804	65.6	129.5	12.0	6.0	44.0	38.6	62.5	142.4
1986	638	778	1,416	1,725,710	2,609	9,795	26,147	1,765,261	67.4	128.5	13.0	5.5	46.4	35.6	59.7	148.9
1987	938	1,045	1,983	1,779,669	2,267	9,285	23,030	1,814,521	68.6	131.6	13.5	5.5	53.9	33.6	61.6	147.2
1988	1,720	1,258	2,978	1,822,448	2,391	9,720	21,549	1,856,178	69.4	132.4	14.0	6.0	54.0	34.8	61.6	152.4
1989[1]	3,258	840	4,098	1,843,347	2,500	7,002	19,985	1,873,171	69.9	133.2					61.9	
1990[3]		750							70.8	134.7					62.6	

[1] Preliminary. [2] Corn syrup & dextrose. [3] Estimate. *Source: Agricultural Marketing Service, U.S.D.A.*

T.653

Sugar Deliveries and Stocks in the United States In Thousands of Short Tons, Raw Value

Year	Quota Allocation	Actual Imports	Deliveries by Primary Distributors Cane[1] Sugar Refineries	Beet Sugar Factories	Importers of Direct Consumption Sugar	Cane Sugar Mills[1]	Total Deliveries	Sales of Refined Sugar For Export	Total Domestic Consumption[2]	Stocks (January 1) Cane Sugar Refineries	Beet Sugar Factories	Comm. Credit Corp.	Refiners' Raws	Mainland Cane Mills	Total
1983			5,714	2,712	49	4	8,479	300	8,812	262	1,417	0	517	701	2,897
1984	3,175.0	3,130.6	5,722	2,732	39	13	8,454	429	8,428	225	1,103	0	528	592	2,448
1985	2,676.8	2,647.0	4,973	3,062	38	4	8,035	464	8,679	214	1,430	0	473	762	2,879
1986	1,849.9	1,845.7	4,667	3,120	28	3	7,786	557	8,422	197	1,189	220	523	834	2,964
1987	1,003.4	997.1	4,512	3,655	18	4	8,167	567	8,897	211	1,304	177	516	830	3,038
1988	1,056.7	1,024.8	4,356	3,832	20	5	8,188	415	8,557	184	1,546	0	401	996	3,128
1989[3]	3,124.9	2,995.8	4,860	3,449			8,309	584	8,952	187	1,372	0	487	1,008	3,053
1990[4]	2,314.8	1,241.8	5,047	3,385			8,475	618	9,309	155	1,412	0	381	899	2,847
1991[4]	1,526.7		4,958	3,815			8,811	614	9,470	168	1,327	0	371	812	2,677

[1] Sugar for direct consumption only. [2] Includes deliveries for U.S. military forces at home and abroad. [3] Preliminary [4] Estimate.
Source: Department of Agriculture

T.654

Sugar, Refined—Deliveries to End User in the U.S. In Thousands of Short Tons

Year	Bakery & Cereal Pdts.	Beverages	Confectionery[3]	Hotels, Restar. & Institutions	Ice Cream & Dairy Products	Canned, Bottled & Frozen Foods	All Other Food Uses	Retail Grocers[4]	Wholesale Grocers[5]	Non-food Uses	Non-industrial Uses	Industrial Uses	Total Deliveries
1983	1,387	1,248	1,087	94	385	454	431	1,168	1,713	131	3,076	5,123	8,199
1984	1,404	908	1,115	108	408	433	416	1,100	1,744	127	3,053	4,810	7,864
1985	1,494	340	1,059	85	456	428	441	1,045	1,874	131	3,123	4,349	7,472
1986	1,432	266	1,051	84	447	387	443	1,066	1,867	138	3,075	4,164	7,239
1987	1,513	212	1,146	91	449	398	534	996	2,040	149	3,199	4,400	7,599
1988	1,541	237	1,107	89	394	354	529	940	2,200	121	3,316	4,283	7,598
1989	1,532	222	1,187	106	426	342	637	1,026	2,051	126	3,259	4,465	7,724
1990[1]	1,607	228	1,277	106	460	331	641	1,071	1,071	107	3,374	4,649	8,023

[1] Preliminary. [2] Used largely for pharmaceuticals & some tobacco. [3] And related products. [4] Chain stores, supermarkets. [5] Jobbers, sugar dealers. [6] Forecast. *Source: Stat. Rep. Serv., U.S.D.A.*

T.649

Centrifugal Sugar (Raw Value) Imported into Selected Countries In Thousands of Metric Tons

Crop Year	Algeria	Canada	China	France	Iran	Israel	Japan	Korea Rep.	Malaysia	Morocco	Nigeria	Peru	United Kingdom	United States	USSR	Germany	World Total[2]
1982–3	636	912	2,563	357	472	302	2,239		433	205	941		1,050	2,393	7,363	183	29,085
1983–4	550	1,001	1,777	363	623	261	1,868		560	224	863	263	1,500	2,667	5,998	180	27,530
1984–5	595	1,054	1,348	360	607	319	1,903	838	580	319	439	130	1,300	3,021	5,704	175	27,937
1985–6	554	1,145	1,216	365	650	233	1,857	970	663	238	600	256	1,484	1,965	5,030	180	28,294
1986–7	680	1,119	1,507	367	750	229	1,695	973	661	297	578	341	1,235	1,503	5,057	161	27,326
1987–8	700	928	3,199	361	800	257	1,848	1,000	741	295	505	222	1,323	1,140	4,515	194	27,430
1988–9	650	711	2,462	382	650		1,909	1,109	797	283	400	126	1,429	1,753	5,300	630	29,122
1989–90	700	824	1,145	358	774		1,791	1,110	841	276	396	130	1,320	2,303	4,400	508	28,754
1990–1[1]	710	900	1,300	355	875		1,850	1,100	870	250	428	200	1,350	2,571	4,600	197	28,645
1991–2[3]		860	1,200	355	875		1,875	1,170	930	265	460	150	1,330	1,805	4,600	195	27,009

[1] Preliminary. [2] Excludes U.S. trade with Territories. [3] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.655

Centrifugal Sugar (Raw Value) Exported from Selected Countries In Thousands of Metric Tons

Crop Year	Australia	Brazil	Czechoslovakia	Cuba	Dom. Republic	France	Thailand	Mauritius	Mexico	Netherlands	Philippines	South Africa	Swaziland	Un. Kingdom	Germany	World Total[2]
1982–3	2,504	2,788	215	7,734	850	3,066	2,045	633			1,301	884		390		30,642
1983–4	2,425	2,801	115	6,792	956	3,300	1,411	644	833		999	569		240		28,842
1984–5	2,591	3,040	234	7,017	885	3,000	1,444	562	273		1,200	687		175		28,434
1985–6	2,858	2,690	200	7,000	480	2,580	2,060	622	192	200	296	1,207	366	275		29,365
1986–7	2,658	2,086	240	6,630	587	1,917	1,960	691	505	666	197	875	506	366	1,891	28,123
1987–8	2,797	2,131	200	6,500	531	2,535	1,891	687	967	366	129	925	394	340	1,572	27,612
1988–9	2,860	1,371	140	7,420	550	2,804	3,004	690	410	446	210	900	428	366	1,264	19,440
1989–90	3,045	1,500	65	7,065	398	2,753	2,666	589	17	548	271	927	449	385	1,539	19,194
1990–1[1]	2,682	1,300	50	6,500	409	2,703	2,800	621	285	516	308	900	469	310	1,748	21,772
1991–2[3]	2,242	1,300	55	6,500	413	2,600	3,000	590	50	342	230	900	450	330	1,700	22,184

[1] Preliminary. [2] Excludes U.S. trade with Territories. [3] Estimate. *Source: Agricultural Marketing Service, U.S.D.A.* T.656

World Raw Sugar Price[2] In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	12.99	13.05	11.24	9.53	8.12	6.85	7.83	6.80	5.90	5.91	6.50	6.27	8.42
1983	5.98	6.40	6.18	6.71	9.27	10.80	10.53	10.52	9.46	9.67	8.52	7.82	8.49
1984	6.95	6.58	6.42	5.96	5.58	5.48	4.51	4.01	4.11	4.66	4.41	3.51	5.18
1985	3.59	3.66	3.78	3.37	2.77	2.74	3.15	4.35	5.14	5.01	5.53	5.37	4.04
1986	4.87	5.55	7.07	8.36	7.64	6.36	5.58	5.50	4.67	5.42	5.93	5.66	6.05
1987	6.47	7.32	7.51	6.64	6.71	6.40	6.03	5.57	5.79	6.60	7.28	8.25	6.71
1988	9.64	8.40	8.48	8.49	8.85	10.52	14.04	11.09	10.18	10.29	10.82	11.28	10.18
1989	9.69	10.49	11.54	12.14	11.93	12.63	14.01	13.96	14.13	14.42	15.02	13.52	12.79
1990	14.38	14.63	15.39	15.24	14.62	12.99	11.92	10.92	11.00	9.77	10.00	9.72	12.55
1991	8.88	8.57	9.22	8.55	7.88	9.37	10.27	9.45	10.27	9.10	8.79	9.03	9.03
1992[1]	8.43												

[1] Preliminary. [2] Contract no. 11–F.O.B. Stowed Caribbean port (bulk). *Source: Sugar Division, Commodity Stabilization Service* T.657

Average Refined Beet Sugar[1] (Wholesale)—Midwest Market In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	24.00	24.00	25.60	26.00	26.50	26.50	26.88	27.00	27.00	26.69	26.50	26.50	26.10
1984	26.85	26.50	26.50	26.50	26.50	26.25	25.75	25.31	25.00	24.60	24.12	24.00	25.66
1985	23.50	23.42	23.00	23.12	23.55	23.12	23.25	23.50	23.44	23.13	22.50	22.62	23.18
1986	23.45	23.31	23.25	23.50	23.30	23.00	23.38	24.20	24.19	23.50	23.00	23.00	23.42
1987	23.30	23.50	23.50	23.50	24.15	24.44	24.50	24.50	24.00	22.85	22.50	22.50	23.60
1988	23.25	22.75	22.75	23.45	24.19	25.25	27.10	27.75	27.50	27.25	26.75	27.80	25.49
1989	28.75	29.00	29.50	29.50	29.50	29.50	29.38	29.25	29.06	28.20	29.50	31.38	29.38
1990	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	30.10	29.13	28.25	30.92
1991	27.40	27.00	27.00	26.20	26.00	25.88	25.50	25.50	25.00	24.94	24.63	24.50	25.79
1992	25.00	25.50											

[1] These are f.o.b. basis prices in bulk, not delivered prices. To obtain delivered prices, add freight "prepays" & deduct discounts & allowances.
Source: Economics & Statistics Service, U.S.D.A. T.658

World Stocks of Centrifugal Sugar at Beginning of Marketing Year In Thous. Tonnes (Raw Value)

Sugar-Making Season	Australia	Brazil	China	Cuba	France	Germany	India	Iran	Italy	Japan	Mexico	Netherlands	Philippines	Switzerland	United Kingdom	U.S. & Insular	World Total
1985–6	603	1,386	1,922	1,600	1,016	566	1,803	151	350	216	1,394	149	229	229	124	1,596	28,203
1986–7	348	981	2,057	550	1,042	692	2,166	296	256	227	1,620	270	283	246	420	1,499	25,972
1987–8	310	845	1,679	360	1,034	707	2,960	296	439	192	1,485	233	209	237	398	1,358	23,408
1988–9	236	771	2,575	460	710	432	2,700	246	479	180	577	223	160	205	338	1,194	20,401
1989–90	256	1,382	2,674	340	642	409	1,315	246	332	242	605	114	275	200	343	1,110	19,440
1990–1[1]	160	1,164	1,363	475	425	314	2,376	220	458	192	750	58	308	197	300	1,098	19,194
1991–2[2]	175	1,045	1,386	748	776	383	3,570	275	284	166	1,225	124	219	161	350	1,373	21,772

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.650

Average Open Interest of World Sugar (#11) Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1982	75,112	73,740	61,663	64,803	62,368	58,525	54,379	53,723	49,535	47,879	57,079	63,482
1983	71,695	82,030	81,988	88,663	89,703	98,999	93,593	94,514	88,524	80,498	83,762	84,159
1984	80,937	79,379	84,043	90,879	88,648	91,792	85,155	95,839	89,421	84,488	85,805	83,433
1985	88,595	88,208	81,731	84,538	86,437	90,837	84,727	91,241	92,998	79,755	92,348	98,473
1986	92,744	92,403	106,334	113,717	100,925	93,288	85,582	87,092	90,033	82,403	86,598	90,652
1987	98,697	103,115	95,910	93,886	96,153	98,463	97,889	98,401	100,395	99,286	103,205	126,916
1988	147,508	147,629	132,539	133,524	137,472	167,829	159,071	137,351	135,121	115,138	119,873	144,931
1989	123,554	126,504	146,798	157,254	146,878	162,097	186,211	179,077	168,840	152,276	171,354	164,757
1990	164,235	160,509	163,155	168,962	170,351	161,320	133,208	121,665	112,065	109,986	110,047	108,939
1991	124,637	129,361	114,432	115,704	110,142	105,607	106,406	107,852	102,546	91,649	90,976	93,827

Source: Coffee, Sugar & Cocoa Exch., Inc., N.Y. T.660

Volume of Trading of World Sugar (#11) Futures at New York In Contracts

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	166,913	209,386	199,263	217,689	138,377	177,657	176,641	144,980	151,639	140,262	160,656	154,657	2,037,020
1983	207,678	249,392	198,034	261,939	396,435	396,267	272,150	329,129	283,827	214,897	231,757	160,436	3,201,941
1984	192,451	205,499	252,489	227,150	175,268	213,491	163,955	228,279	263,419	234,008	154,735	124,579	2,449,549
1985	273,316	265,967	215,540	210,046	193,527	237,904	263,842	338,816	323,387	224,856	216,340	249,398	3,012,929
1986	308,044	268,053	382,053	519,027	343,746	289,900	281,124	235,555	328,830	258,744	173,612	195,126	3,583,814
1987	387,630	381,393	323,047	381,972	278,857	313,001	248,133	235,263	367,074	331,052	268,226	337,851	3,853,499
1988	603,565	605,773	348,510	391,971	474,693	705,498	807,381	442,101	450,116	276,010	332,463	381,040	5,819,121
1989	499,119	520,018	575,486	600,852	557,386	660,521	624,969	517,295	526,834	328,469	456,485	375,927	6,243,361
1990	519,886	523,591	588,021	505,492	598,320	532,937	384,116	441,608	448,195	372,925	303,065	206,645	5,424,801
1991	313,915	510,163	388,672	477,954	286,120	534,639	309,836	352,351	366,007	240,812	253,201	234,876	4,268,546

Source: Coffee, Sugar & Cocoa Exch., Inc., N.Y. T.661

U.S. Deliveries[1] of All Sugar by Primary Distributors By Quarters In Thousands of Short Tons (Raw Value)

Year	1st	2nd	3rd	4th	Total	Year	1st	2nd	3rd	4th	Total
1981	2,208	2,532	2,725	2,305	9,770	1987	1,908	2,001	2,146	2,112	8,167
1982	2,083	2,418	2,400	2,252	9,153	1988	1,951	1,983	2,147	2,107	8,188
1983	2,078	2,195	2,349	2,190	8,812	1989	1,923	2,051	2,181	2,185	8,340
1984	2,029	2,121	2,238	2,066	8,454	1990	1,976	2,052	2,322	2,311	8,661
1985	1,909	1,972	2,150	2,044	8,035	1991[2]	2,019	2,103	2,317		
1986	1,819	1,907	2,069	1,991	7,786						

[1] Includes for domestic consumption and for export. [2] Preliminary. *Source: Department of Agriculture* T.659

United States Foreign Trade of Sugar (Raw & Refined) In Thousands of Short Tons

Year		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1988	Exports	10.4	23.1	13.0	22.4	9.0	41.6	36.0	28.3	23.0	38.2	16.8	615.6	877.4
	Imports	71	94	71	76	96	62	112	144	99	164	90	134	1,213
1989	Exports	24.2	36.2	27.2	27.3	22.8	33.8	18.4	45.6	50.4	51.7	45.6	28.9	412.1
	Imports	104	112	152	84	126	149	181	226	106	97	119	85	1,541

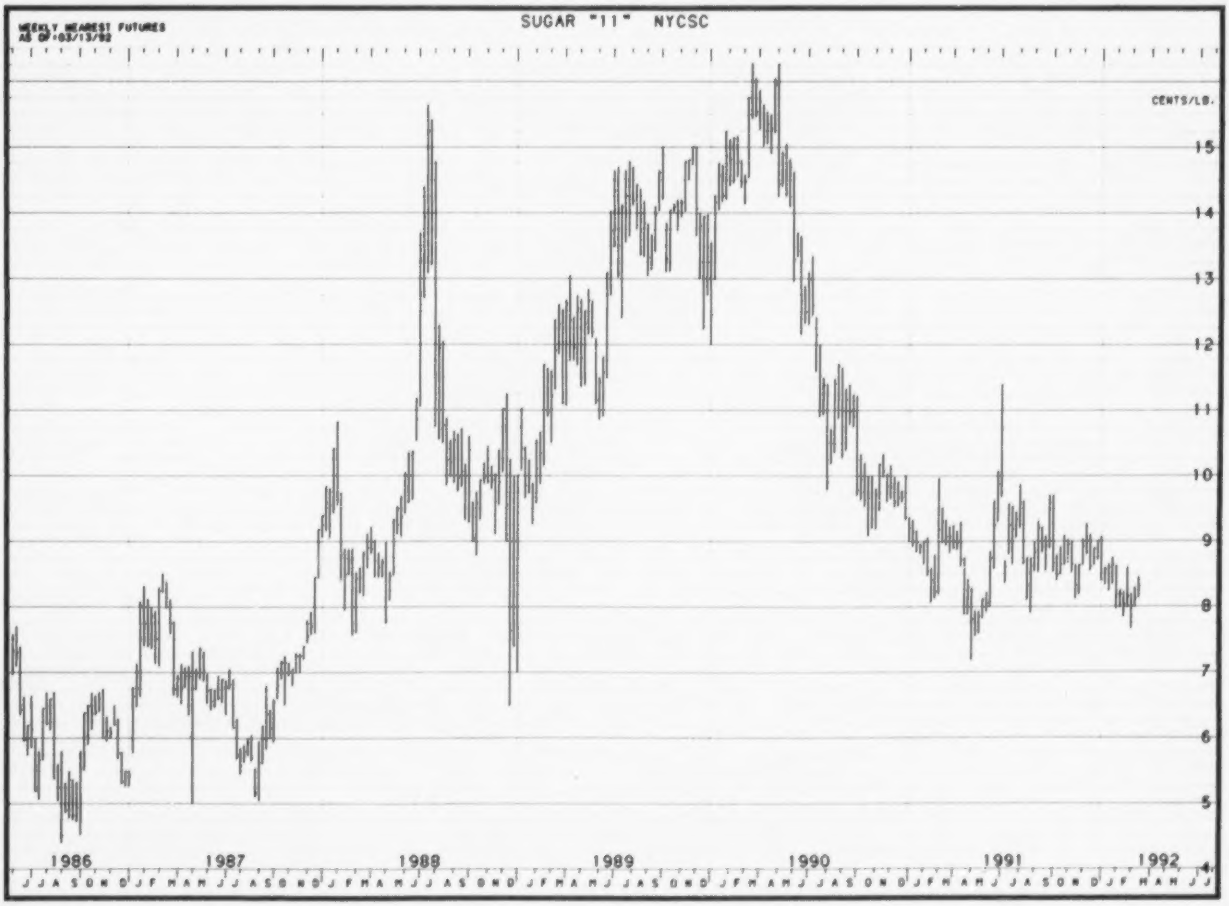
[1] Preliminary. *Source: Bureau of the Census*

SUGAR

High, Low & Closing Prices of March World Sugar (#11) At New York In Cents per Pound

Year of Delivery	Year Prior to Delivery													Delivery Year		Life of Delivery Range
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
1986 High	7.40	7.12	6.43	6.05	5.21	4.69	4.33	5.45	5.59	6.20	6.15	6.39	6.56	6.13	6.52	8.27
Low	6.02	6.13	5.70	5.05	4.58	3.98	3.34	3.59	4.41	5.17	5.25	5.73	5.38	4.97	5.60	3.34
Close	6.22	6.31	5.83	5.06	4.17	4.28	3.63	5.22	5.13	5.65	6.14	6.13	5.62	5.92	6.28	—
1987 High	7.68	7.60	7.50	9.48	9.67	9.50	8.30	7.54	7.62	6.53	7.10	7.30	7.07	8.32	8.30	9.67
Low	6.70	6.45	6.95	7.33	8.31	7.65	6.70	6.17	6.15	5.83	5.75	6.45	5.99	5.77	7.09	5.75
Close	6.96	7.36	7.37	9.43	9.43	8.00	7.51	7.20	6.16	6.28	6.90	6.60	6.16	7.74	8.24	—
1988 High	8.01	8.89	8.70	8.95	8.05	8.03	7.73	7.58	7.02	7.35	7.73	8.12	9.55	10.83	9.74	10.83
Low	7.18	7.04	7.97	7.40	7.22	7.40	7.15	6.53	6.39	6.43	6.79	7.31	7.86	9.06	7.56	6.39
Close	7.30	8.41	8.65	7.45	7.75	7.52	7.39	6.71	6.56	6.96	7.59	8.01	9.49	9.64	7.99	—
1989 High	9.65	10.32	9.42	9.02	9.07	9.68	12.28	14.39	11.23	10.72	10.61	11.34	12.00	11.03	11.70	14.39
Low	8.25	9.30	7.66	8.12	8.38	8.48	9.50	9.90	9.61	8.69	9.10	9.86	10.72	9.26	9.87	7.94
Close	9.61	9.56	8.05	8.83	8.84	9.36	11.90	10.67	10.27	9.64	10.59	11.07	11.15	10.49	10.75	—
1990 High	10.62	10.10	11.29	11.83	12.02	12.10	13.58	13.85	13.61	14.33	14.42	15.38	14.32	15.25	15.17	15.38
Low	9.90	9.07	9.70	10.74	11.22	10.62	10.73	11.94	12.18	12.37	13.58	13.96	12.78	12.98	14.13	
Close	10.16	9.96	11.12	11.52	11.24	10.63	13.56	13.58	12.74	14.16	13.97	14.15	13.16	14.73	14.31	—
1991 High	13.03	13.80	13.71	14.35	15.04	15.22	12.98	12.73	11.39	11.10	10.33	10.33	10.01	9.37	9.97	
Low	12.06	12.25	13.09	13.11	13.94	13.00	11.65	10.58	9.73	10.10	9.08	9.40	9.33	8.65	8.06	
Close	12.32	13.35	13.28	14.25	15.03	13.08	12.32	10.79	10.30	10.11	9.42	9.82	9.37	8.79	8.95	
1992 High	10.10															
Low	9.35															
Close	9.35															

Source: Coffee, Sugar & Cocoa Exchange, Inc., N.Y. T.662



Sulfur

U.S. apparent sulfur consumption fell 5 percent in 1991 to 12.4 million tonnes from 13.06 million in 1990. About 90 percent of the sulfur was converted to sulfuric acid prior to end use. Agricultural chemicals (primarily fertilizers) accounted for 66 percent of the demand. Most industrial products require sulfur in one form or another during manufacture, and miscellaneous uses took 10 percent; chemicals, 12 percent; petroleum refining, 5 percent; and metal mining, 5 percent.

The occupation of Kuwait and the Gulf War disrupted sulfur production in that region. World production fell in 1991 to 56.7 million tonnes from 57.668 million in 1990. Demand was little changed, but U.S. prices fell to an average of $70 a tonne from $80.14 a year earlier. Canadian producers, who recover sulfur from oil and gas, cut prices to compensate for lower natural gas prices and to build market share. Canadian production was put at 7 million tonnes, up from 6.947 million a year earlier.

U.S. production fell to 10.5 million tonnes from 11.56 million in 1990 because of the depletion of two Frasch process mines in Louisiana. However, the Main Pass mine in Louisiana was expected to come on line in mid-1992. It will be the largest such structure in the Gulf of Mexico, producing 2 million tonnes annually, in conjunction with oil and gas.

World Production of Sulfur [All Forms] In Thousands of Metric Tons

Year	Canada	Chile	China	France	Germany	Israel	Italy	Japan	Mexico	Poland	Saudi Arabia	Spain	Turkey	USSR	United States	Yugoslavia	World Total
1984	6,596	86	2,650	1,862	1,481	10	400	2,592	1,985	5,210	883	1,231	119	9,200	10,652	464	51,859
1985	6,645	199	2,900	1,723	1,769	25	521	2,498	2,140	5,203	1,100	1,455	135	8,530	11,609	391	53,771
1986	6,587	177	3,100	1,306	1,773	29	679	2,371	2,184	5,207	1,446	1,415	126	8,165	11,087	498	53,601
1987	6,619	167	4,500	1,252	1,825	40	740	2,316	2,458	5,324	1,432	1,195	141	9,250	10,538	436	56,068
1988	6,930	178	4,750	1,168	1,795	50	830	2,447	2,378	5,090	1,450	1,340	138	10,265	10,746	425	58,096
1989[1]	6,625	266	4,900	1,051	1,885	50	830	2,523	2,367	5,090	1,400	1,235	125	9,350	11,592	428	58,348
1990[2]	6,947		4,900	1,045			490	2,703	2,340	5,030	1,500	1,085		9,025	11,560		57,668
1991[2]	7,000		4,900	1,050			500	2,700	2,300	5,000	1,500	1,100		9,000	10,600		56,700

[1] Preliminary. [2] Estimate. [3] Content of ore. *Source: Bureau of Mines* T.663

Salient Statistics of Sulfur in the United States In Thousands of Metric Tons of Sulfur Content

Year	Production of: Native Sulfur[2]: Frasch-Process Total	Native Sulfur[2]: Mines: Louisiana	Native Sulfur[2]: Mines: Texas	Recovered Elemental Brimstone	Pyrites (Includ. Coal Brasses)	By-product Sulfuric Acid[3]	Other Sulf. Acid Compounds	Production (All Forms)	Imports Pyrites & Sulfur	Producers' Stocks Dec. 31[4]	Exports (Elemental)	Apparent Consumption (All Forms)	Sales Value of Shipments—For Mine/Plant: Frasch ($ Per Tonne)	Recovered ($ Per Tonne)	Average ($ Per Tonne)
1984	4,193	1,937	2,257	5,214	N.A.	962	283	10,652	2,557	2,419	1,334	12,679	109.20	80.02	94.31
1985	5,011	2,071	2,940	5,313	N.A.	957	328	11,609	2,104	2,799	1,365	11,968	122.62	92.11	106.46
1986	4,043	1,579	2,463	5,816	N.A.	919	309	11,087	1,347	2,748	1,895	10,586	123.79	92.06	105.22
1987	3,202	1,369	1,833	6,161	N.A.	1,003	173	10,539	1,599	2,316	1,242	11,323	107.15	79.63	89.78
1988	3,174	1,183	1,991	6,444	N.A.	1,125	3	10,746	1,996	1,112	1,223	12,712	99.24	77.03	85.95
1989[1]	3,888	1,508	2,380	6,510		1,190	4	11,592	2,260	1,301	1,024	12,685	100.18	78.70	86.62
1990[5]	3,726			6,536				11,560	2,450	1,423	972	13,056			80.14
1991[5]	2,800			6,600				10,600		1,300	1,300	12,400			70.00

[1] Preliminary. [2] Or sulfur ore. [3] Basis 100%, produced at Cu, Zn, & Pb plants. [4] Frasch & recovered. [5] Estimates. *Source: Bureau of Mines* T.664

Sulfur Consumption & Foreign Trade of the United States In Thousands of Metric Tons

Year	Net Import Reliance as a % of Apparent Consumption	Apparent Consumption of Sulfur in All Forms[3]: Native Sulfur (Frasch)	Recovered Sulfur Shipm.	Total Pyrites Shipments	Smelter Acid Prod. Shipm.	Other Forms[2] Shipm.	Total	Imports of Recovered Sulfur	Shipments of Frasch Sulfur	Imports of Frasch Sulfur	Foreign Trade: Exports: Quantity	Exports: Value Ths. $	Imports: Quantity	Imports: Value Ths. $
1983	15	4,114	5,041	N.A.	831	302	10,988	1,091	4,111	604	992	109,298	1,695	129,110
1984	16	4,812	5,210	N.A.	962	283	12,679	1,835	5,001	722	1,334	156,067	2,557	200,189
1985	3	4,416	5,266	N.A.	957	328	11,968	1,380	4,678	724	1,365	189,248	2,104	199,240
1986	—	3,584	5,798	N.A.	919	309	10,586	621	4,108	726	1,895	251,664	1,347	142,220
1987	7	3,938	6,180	N.A.	1,003	173	11,323	806	3,610	793	1,242	139,431	1,599	152,096
1988	16	4,956	6,470	N.A.	1,125	3	12,712	917	4,341	1,079	1,223	131,863	1,996	185,864
1989[1]	9	4,536	6,475		1,190	4	12,685	1,174	3,780	1,086	1,024	107,126	2,260	209,465
1990[4]	11						13,056		3,676		972		2,450	
1991[4]	15						12,400		3,135		1,300			

[1] Preliminary. [2] Includes hydrogen sulfide, liquid sulfur dioxide. [3] Crude sulfur equivalent. [4] Estimate. *Source: Bureau of Mines* T.665

Sunflowerseed and Oil

The world sunflowerseed crop in 1991/92 was forecast by USDA at 21.4 million tonnes, down 4 percent from the year before. Sunseed comprises close to 10 percent of global oilseed production. Output in the Soviet Commonwealth, the chief producer, was affected by dry weather and was 6 million tonnes. The EC crop was forecast at 4.1 million tonnes. While France produced a near record crop of 2.6 million tonnes under excellent growing conditions, Spain's output was affected by drought and fell to 960,000 tonnes. Argentina was due to harvest 3.5 million tonnes, 400,0000 less than the previous season. China and Turkey were other large sunseed producers.

The U.S. sunseed crop was projected to rise to 1.54 million tonnes or 3.4 billion pounds from just over 1 million tonnes last season. Acreage planted to sunflowers expanded by 36 percent to 2.6 million acres; harvested acreage was estimated at 2.53 million. North Dakota seeded an extra 340,000 acres, while Minnesota and South Dakota together added 300,000 more. Area expanded in Kansas, Texas, Colorado and Nebraska. Producers switched more acreage into oil-type sunflowers because of adequate spring rains in the northern Plains, as well as changes in the crop program.

Under the latest farm legislation, U.S. growers have the flexibility to plant sunseed on the base acreage of other crops like wheat. Sunflowers and other minor oilseeds now have a price support loan rate and are eligible for nonrecourse price support loans. The loan rate is $.089 per pound.

World exports of sunseed in 1991/92 were projected at 1.62 million tonnes, down 12 percent from the prior season. France was forecast to ship 900,000 tonnes, while Argentina was to export only 150,000 tonnes. U.S. exports were to rise to 150,000 tonnes from 100,000 the season before, and the changes in the farm program should make it possible for them to grow further. The major importers of sunseed are Germany, the Netherlands, Portugal and Mexico. The world sunseed crush was forecast at 18.4 million tonnes, down 5 percent. Ending stocks of sunseed were projected at 590,000 tonnes, nearly 50 percent higher than a year earlier.

Global production of sunseed meal was estimated at 8.41 million tonnes, down 5 percent from the year before. Argentina was the dominant exporter with shipments of 1.35 million tonnes.

World sunoil production was forecast at 7.6 million tonnes, some 3 percent less than a year earlier. The Soviets were the largest producer and user of sunoil. Consumption of sunoil has been rising in some areas because of its lower levels of saturated fat compared with oils like corn, soy and palm. Argentina remains a major exporter with sales expected to total just over 1 million tonnes. U.S. exports were to increase by over 30 percent to 225,000 tonnes. The U.S. exports sunoil under the Sunflowerseed Oil Assistance Program (SOAP) to Egypt, Algeria and Mexico. The U.S. targeted the Soviet Commonwealth for sales of oil under the program in 1991.

World Production of Sunflowerseed In Thousands of Metric Tons

Crop Year	Argentina	Australia	Bulgaria	Burma	China	France	Hungary	India	Romania	South Africa	Spain	Turkey	United States	USSR	Yugoslavia	World Total
1988–9	3,200	170	367	129	1,180	2,335	708	397	580	400	1,123	1,100	813	6,157	410	20,437
1989–90	3,280	82	400	120	980	2,112	701	500	780	400	906	1,200	798	7,000	417	21,660
1990–1[1]	3,900	158	374	115	1,200	2,250	554	600	780	450	1,300	850	1,032	6,560	426	22,276
1991—2[2]	3,500				1,150								1,637	6,000		21,430

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.668

Sunflowerseed Statistics in the United States

Crop Year Begin Sept.	Acres Harvested in Ths.	Yield per Harv. Acre Pounds	Farm Price $ Metric Ton	Value of Production Mil. $	Supply: Production	Supply: Imports	Supply: Stocks Sept. 1	Supply: Total	Disappearance: Crushings	Disappearance: Exports	Disappearance: Non-Oil Usage	Disappearance: Seed	Disappearance: Residual	Disappearance: Total
					In Thousands of Metric Tons									
1988–9	1,921	933	267	208.9	813	25	197	1,035	575	87	——	294	——	956
1989–90	1,786	985	234	199.5	798	20	79	897	546	96	——	230	——	872
1990–1[1]	1,851	1,229	243	250.1	1,032	35	25	1,092	585	90	——	338	——	1,013
1991–2[2]	2,530	1,305	215	322.0	1,498	10	80	1,588	825	150	——	363	——	1,338

[1] Preliminary. [2] Estimate. *Source: Economic Research Service, U.S.D.A.* T.666

Sunflowerseed Statistics in the United States In Metric Tons

Crop Year Begin. Oct.	Sunflowerseed Oil: Supply: Stocks Oct. 1	Sunflowerseed Oil: Supply: Production	Sunflowerseed Oil: Supply: Total	Sunflowerseed Oil: Disappearance: Exports	Sunflowerseed Oil: Disappearance: Domestic	Sunflowerseed Oil: Disappearance: Total	Sunflowerseed Oil: Price $ per Metric Ton (Crude Mpls.)	Sunflowerseed Meal: Supply: Stocks Oct. 1	Sunflowerseed Meal: Supply: Production	Sunflowerseed Meal: Supply: Total	Sunflowerseed Meal: Disappearance: Exports	Sunflowerseed Meal: Disappearance: Domestic	Sunflowerseed Meal: Disappearance: Total	Sunflowerseed Meal: Price $ per Metric Ton 28% Protein
1988–9	71	235	306	212	57	269	500	4	298	315	6	306	312	135
1989–90	37	215	254	159	78	237	538	3	262	277	3	269	272	111
1990–1[1]	17	242	262	155	80	235	517	5	295	315	10	300	310	97
1991–2[2]	27	338	370	225	105	330	448	5	415	435	10	420	430	105

[1] Preliminary. [2] Estimate. *Source: Economic Research Service, U.S.D.A.* T.667

Tall Oil

Tall Oil—Supply & Distribution in the U.S. In Millions of Pounds

	Supply (Crude)			Disposition										
						Non Food Products								
Beginning Oct. 1	Production	Stocks Oct. 1	Total Supply	Exports	To U.S. Territ.	Soap	Paint & Varnish	Linoleum & Oilcloth	Resins & Plastics	Other Drying Oils	Lubricants & Similar Oils	Fatty Acids	Other	Total Nonfood Products
1983–4	1,293	217	1,510				33		—			1,096		1,228
1984–5	1,321	113	1,434				20		16			994		1,087
1985–6	1,415	126	1,541			13	17		16		12	1,055		1,143
1986–7[2]	1,501	160	1,661			12	15		16		13	1,153		1,227
1987–8[2]	1,483	110	1,593			17	23		21		10	1,181		1,269
1988–9[2]	1,542	113	1,655			8	32		18		8	1,157		1,234
1990–91														

[1] Preliminary. [2] Estimated. *Source: Agricultural Marketing Service, U.S.D.A.* T.669

U.S. Tall Oil Consumption in Inedible Products In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	100.0	96.3	106.9	92.8	98.7	109.1	98.1	114.0	93.7	94.1	95.0	82.6	1,181
1984	100.8	100.7	105.6	97.8	104.2	113.6	117.2	105.2	111.2	100.6	95.7	85.2	1,238
1985	84.1	87.4	94.3	90.4	84.6	85.8	91.7	95.3	91.7	97.6	88.2	85.1	1,076
1986	86.3	93.1	106.0	106.1	95.3	99.5	93.7	101.4	91.1	103.4	80.3	93.7	1,150
1987	109.2	101.8	107.9	104.5	100.1	112.1	109.9	99.3	104.8	111.4	94.8	87.6	1,243
1988	109.2	103.2	111.0	108.0	112.3	104.0	105.9	110.6	111.4	103.1	100.0	91.5	1,270
1989	111.5	103.0	107.7	107.3	102.9	105.0	101.6	111.9	88.8	88.8	84.3	82.8	1,196
1990	100.4	92.4	105.9	91.2	86.5	84.6	78.5	82.4	69.1	69.7	78.4	78.2	1,017
1991[1]	—	249.0	—	—	237.6	—	—	223.0	—	—		—	

[1] Preliminary. *Source: Statistical Reporting Service, U.S.D.A.* T.670

Tall Oil Production in the United States In Millions of Pounds

Crop Year		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1985–6	Crude	115.5	103.5	167.6	120.2	113.8	126.6	124.0	111.7	108.4	107.7	107.9	111.8	1,415.4
	Refined	9.8	9.2	8.7	8.3	8.0	7.9	8.7	8.7	8.2	8.2	9.4	9.7	104.8
1986–7	Crude	114.4	106.8	120.9	123.8	143.0	145.5	132.6	124.3	122.9	130.9	116.6	119.7	1,501.4
	Refined	9.1	7.8	8.2	9.0	8.9	8.6	9.2	10.4	8.4	10.5	9.7	9.6	109.4
1987–8	Crude	123.0	116.2	127.9	121.7	126.3	141.3	124.3	119.3	117.1	124.2	116.4	125.6	1,483.3
	Refined	9.2	9.0	8.9	9.5	11.3	10.2	9.1	9.3	5.5	8.2	9.3	10.1	109.6
1988–9	Crude	120.9	122.8	125.9	144.2	121.9	142.4	133.2	123.7	132.0	123.7	138.4	112.6	1,541.7
	Refined	9.8	8.7	8.0	9.5	7.5	9.4	9.1	8.0	9.5	8.6	8.3	7.0	103.4
1989–90	Crude	123.2	121.2	107.0	92.1	120.0	137.1	134.6	126.7	122.1	118.0	120.6	102.4	1,437.0
	Refined	9.3	8.1	6.6	6.0	5.2	4.8	5.5	4.7	4.8	5.3	3.3	5.7	69.3
1990–1[1]	Crude	120.8	119.1	126.5	—	389.5	—	—	362.4	—	—	367.5	—	1,485.9
	Refined	5.6	6.2	4.2	—	15.7	—	—	15.3	—	—	17.6	—	64.6

[1] Preliminary. *Source: Bureau of the Census* T.0578

Tall Oil Stocks in the United States In Millions of Pounds

Crop Year		Oct. 1	Nov. 1	Dec. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1
1985–6	Crude	125.9	125.1	158.7	167.6	154.1	160.7	182.7	183.4	181.1	175.5	184.1	169.7
	Refined	19.7	19.7	19.9	19.0	21.2	19.3	25.3	29.2	27.6	26.5	25.3	30.1
1986–7	Crude	177.8	164.9	173.9	196.1	185.6	199.2	211.6	204.4	209.7	194.5	171.6	161.2
	Refined	29.1	27.7	23.4	28.3	26.5	27.3	35.8	29.3	30.9	31.8	33.4	33.7
1987–8	Crude	160.1	144.0	147.7	161.8	148.3	159.1	165.4	155.9	138.7	145.3	148.8	115.0
	Refined	33.2	34.5	35.3	39.2	30.1	27.9	28.1	28.2	27.2	22.7	22.1	22.9
1988–9	Crude	109.7	107.6	103.1	106.4	120.1	122.5	125.9	127.7	134.1	127.9	133.4	125.0
	Refined	22.3	22.1	23.4	23.2	25.3	26.5	27.0	28.3	25.8	25.9	25.8	22.5
1989–90	Crude	112.7	130.4	145.2	133.9	114.0	112.6	106.6	114.1	106.9	103.5	108.3	104.8
	Refined	23.4	25.8	28.5	23.3	22.2	21.4	20.3	16.6	17.2	17.2	18.0	15.7
1990–1[1]	Crude	101.5	83.1	76.6	—	114.5	—	—	120.1	—	—	172.9	—
	Refined	15.3	34.0	35.8	—	29.7	—	—	30.2	—	—	33.7	—

[1] Preliminary. *Source: Bureau of the Census* T.0578A

Tallow and Greases

Production of tallow and greases has been trending higher on a world basis and was estimated at 6.72 million tonnes in 1991, against 6.69 million the year before. The largest producers were the U.S., the European Community, the Soviet Commonwealth, Australia, Argentina, and Brazil. Tallow output in the U.S. increased in 1991, mainly because of higher slaughter weights.

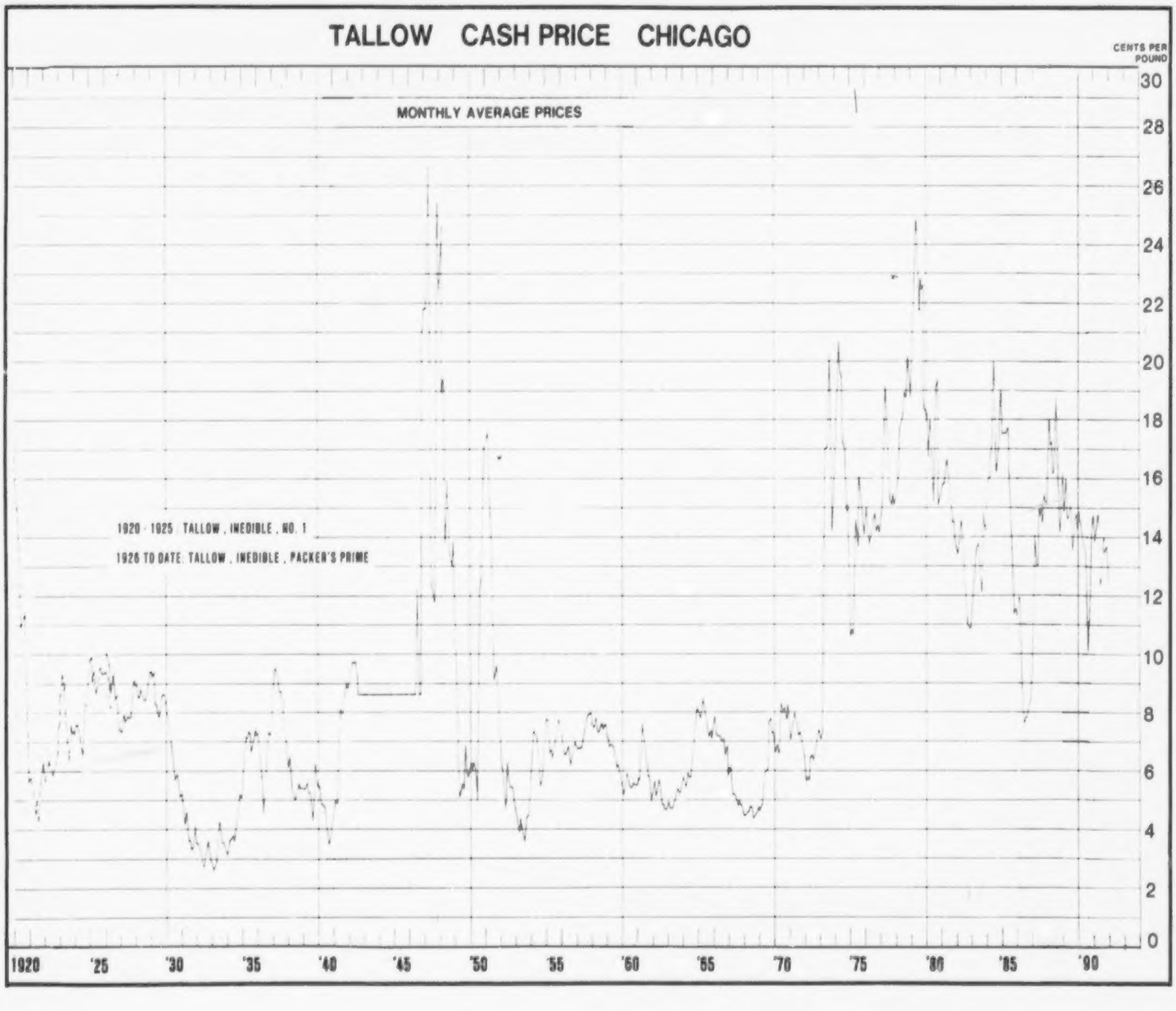
Consumption, which has also been rising worldwide, was placed at 6.77 million tonnes and compared with 6.69 million in 1990. Leading consumers included the U.S., the EC, Japan, Australia, and Brazil. In the U.S., consumption of edible tallow declined sharply, however, because of consumer concerns about cholesterol. Edible tallow use in the U.S. in 1990/91 amounted to only 501 million pounds, less than half the level five years earlier.

Worldwide trade in tallow and greases declined in 1991 and was an estimated 2.08 million tonnes, versus 2.15 million in 1990 and 2.28 million in 1989. The U.S. was by far the leading exporter, shipping 1.02 million tonnes, followed by the EC, with 497,000 tonnes. Several EC members, namely the Netherlands and Spain, were large importers, as was Mexico.

Mexico has been the chief U.S. export market for tallow in recent years, often importing directly from U.S. beef packers. The country's tallow imports compete with palm oil on a price basis.

The substitution of palm oil for tallow, seen in the world market in 1990, slowed in 1991 as palm oil prices increased.

The price of inedible tallow, Number 1, in Chicago started 1991 at 13.88 cents/lb. and peaked at 14.80 cents in April. Inedible prices ended the year at only 12.50 cents.



TALLOW CASH PRICE CHICAGO

World Production of Tallow and Greases (Edible and Inedible) In Thousands of Metric Tons

Year	Argentina	Australia	Brazil	Canada	Colombia	USSR	France	Germany	Italy	Japan	Mexico	Netherlands	New Zealand	United Kingdom	United States	Eastern Europe	World Total
1982	276	316	220	220	32	350	188	232	96	196	47	91	125	218	3,228	138	6,241
1983	263	319	230	215	28	355	192	235	94	197	64	89	138	222	3,351	132	6,369
1984	273	300	200	217	30	360	190	250	110	198	69	98	131	238	3,275	136	6,326
1985	293	305	220	216	30	370	180	250	115	212	69	103	156	230	3,373	142	6,527
1986	305	328	200	217	30	375	175	256	115	215	58	119	126	220	3,375	156	6,580
1987	289	350	170	205	28	380	182	282	110	219	43	127	132	233	3,190	135	6,420
1988	279	456	190	200	31	390	186	278	100	218	54	125	146	200	3,188	132	6,533
1989	278	489	272	203	32	350	179	280	90	220	65	125	133	207	3,116	122	6,563
1990[1]	282	540	258	199	35	360	180	290	95	215	58	142	110	245	3,067	135	6,691
1991[2]	277	513	273	195	36	360	185	270	95	208	55	155	117	247	3,095	144	6,721

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.672

Salient Statistics of Tallow and Greases (Inedible) in the United States In Millions of Pounds

	Supply				Exports & Shipments	Utilization in Nonfood Products						Wholesale Prices, ¢ Per Lb.		
													Inedible Chi.	
Year	Production	Imports	Stocks Jan. 1	Total		Soap	Feed	Fatty Acids	Lubricants & Oils	Other	Total[2]	Edible (Loose) Chicago	No. 1	Bleachable Fancy
1982	6,026	0	451	6,477	3,035	545	1,418				2,898	N.A.	12.8	
1983	6,129	0	368	6,497	2,931	574	1,397				2,813	N.A.	13.4	
1984	5,881	0	376	6,257	2,735	623	1,346				2,941	28.7	14.5	
1985	5,827	0	368	6,195	2,737	535	1,363				2,782	20.1	14.3	
1986	5,543	0	362	5,905	2,562	482	1,604				2,917	13.5	9.0	
1987	5,602	0	316	5,918	2,491	571	1,727				3,082	15.6	14.9	
1988	6,158	0	407	6,565	2,807	461	1,864				3,147	17.9	16.6	
1989[1]	5,848	0	399	6,247	2,679	368	1,919				3,149	N.A.	14.7	

[1] Preliminary. [2] Includes small amounts used in drying-oil products in some years. [3] Estimate. *Sources: Economic Research Service, U.S.D.A.; Bureau of Labor Statistics* T.673

Edible Tallow: Supply, Disappearance, and Price, U.S. In Millions of Pounds, Rendered Basis

	Supply			Disappearance						
Calendar year	Stocks Jan. 1	Production	Total	Domestic	Exports	Total	Direct use	Baking or Frying Fats	Per capita (Direct use–Lbs.)	At Chi. Price[1] ¢ Lb.
1982	54	1,110	1,163	1,030	75	1,106	303	679	1.3	N.A.
1983	59	1,260	1,319	1,166	107	1,273	480	632	2.0	N.A.
1984	46	1,340	1,386	1,295	54	1,349	395	821	1.7	28.74
1985	36	1,611	1,647	1,526	80	1,595	458	1,015	1.9	20.14
1986	41	1,523	1,564	1,469	62	1,531	429	973	1.8	13.49
1987	33	1,258	1,291	1,186	65	1,251	239	890	1.0	15.60
1988	40	1,296	1,336	1,148	139	1,287	197	840	.8	17.86
1989	48	1,167	1,215	1,132	45	1,177	230	750	.9	15.76
1990	33	1,175	1,208	945	230					
1991[2]	33	1,185	1,218	945	240					

[1] Loose, average wholesale, Chicago. [2] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.673A

Average Wholesale Price of Tallow, Inedible, No. 1 Packers (Prime), Delivered, Chicago In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1982	13.4	13.4	14.1	14.4	14.5	14.3	13.6	12.0	11.4	11.0	11.0	10.8	12.8
1983	11.4	12.0	12.5	13.6	13.8	13.2	12.1	13.7	14.9	14.2	14.8	15.1	13.4
1984	16.0	16.0	16.8	17.0	19.1	20.0	17.1	16.2	16.9	17.9	19.0	17.5	17.5
1985	17.5	17.5	17.5	17.7	16.1	14.3	13.6	12.1	11.4	11.5	11.3	11.5	14.3
1986	12.0	11.8	9.4	8.9	8.7	7.6	7.8	7.8	8.1	8.4	8.5	9.5	9.0
1987	15.84	15.15	13.03	12.98	15.42	14.73	15.17	14.50	15.53	15.23	15.17	15.56	14.86
1988	18.00	17.08	17.25	16.17	15.93	17.18	18.81	17.44	16.00	15.02	14.18	16.33	16.62
1989	14.90	16.00	14.86	14.60	14.70	15.10	14.48	13.52	14.13	15.25	15.50	15.50	14.88
1990	14.87	14.50	14.47	13.77	13.66	N.A.	13.50	10.12	12.00	13.42	14.09	14.75	13.56
1991	13.88	14.28	14.43	14.80	13.02	13.25							

Source: Economic Research Service, U.S.D.A. T.674

Tea

India is the leading tea producer and China is second, while India competes with Sri Lanka for top-ranking exporter. Sri Lanka and India are expected to intensify their efforts to maintain market share during the 1990s. Kenya's tea crops continue to expand, and the country is now the fourth largest producer, having surpassed the former USSR. By the early 1990s, the USSR had fallen to seventh. In 1991, the Persian Gulf war and U.N. trade sanctions against Iraq distorted Mideast import patterns.

World tea production and consumption remain in close balance, skewed somewhat towards larger supplies. Production has been trending higher, reaching a record 2.56 million tons in 1990, with further gains expected during the decade, led by Asian producers. Global consumption was likely to trend higher, but at a somewhat lower rate.

Tea consumption in many nations faces strong competition from soft drinks, fruit juices, and coffee. In the U.S., about 80 percent of consumption is iced tea, whereas tea is a hot beverage in most other countries. India is the leading consumer, while the U.K. is largest on a per capita basis.

U.S. tea imports in 1990 fell 11 percent to less than 80,000 tons and were mainly black teas, primarily from China and Indonesia. Argentina exports a relatively large tonnage to the U.S. Herbal tea imports by the U.S. are mostly from China, India, Thailand and Germany, and the U.S. exports some herbal teas.

About 60 percent of U.S. tea consumption is as tea bags, 20-25 percent as instant mixes, and 10-15 percent as loose tea. (The U.S. produces about 54,000 kilograms annually on a tea plantation on an island just off South Carolina).

Most of the U.K.'s tea is imported from Kenya, India, Malawi and Sri Lanka, and in the U.K. competition from other beverages and greater use of bagged, rather than loose, tea has caused consumption to decline. Foreign-exchange shortages have cut deeply into USSR tea imports. India is the largest exporter to the USSR, while Sri Lanka, which exports most of its own production, ships mainly to the Mideast. World tea trade has become increasingly competitive. U.N. efforts have been under way to promote world tea and to set minimum export standards to improve tea quality.

Much of the world's tea is sold via auctions. In 1991, large quantities of low-quality teas pressured world prices, which averaged about 94 cents/lb. in the first quarter of the year, versus almost a $1.00/lb. in the same 1990 period, basis London auction prices.

World Tea Production, in Major Producing Countries In Thousands of Metric Tons

Year	Argentina	China (Mainland)	Sri Lanka (Ceylon)	India	Indonesia	Iran	Japan	Kenya	Malawi	Mozambique	Bangladesh	Taiwan	Turkey	Tanzania	USSR	World Total
1978	26.3	268.0	199.0	563.8	73.2	23.0	104.7	93.4	31.7	18.1	38.0	25.9	86.5		111.2	1,755
1979	32.1	277.1	206.4	551.9	73.3	21.0	98.0	93.3	32.6	19.7	35.9	27.1	102.0		117.6	1,782
1980	40.0	304.0	191.4	569.6	98.7	20.0	102.3	89.9	29.9	22.3	40.0	24.5	95.9	17.1	129.8	1,857
1981	33.0	343.0	210.1	560.0	110.2	20.0	102.3	90.9	32.0	23.3	41.3	25.2	42.6	15.9	136.5	1,870
1982	40.0	397.0	188.6	560.7	90.2	25.0	98.5	96.0	38.5	21.0	40.9	24.1	68.0	16.2	139.8	1,934
1983	45.0	401.0	180.0	581.5	111.5	25.0	102.7	119.7	32.0	14.0	43.7	24.3	101.0	15.6	145.6	2,035
1984	46.0	414.0	209.2	639.9	126.2	46.8	92.5	116.2	37.5	11.0	38.2	24.4	113.7	16.5	151.1	2,194
1985	35.0	432.0	215.3	656.2	132.3	41.5	95.5	147.1	40.0	7.0	43.3	23.2	137.1	16.5	152.1	2,292
1986	40.0	461.0	212.7	620.8	129.5	48.5	93.6	143.3	39.0	5.0	37.6	23.9	148.3	15.1	146.6	2,284
1987	43.0	508.0	214.6	665.3	126.1	45.6	96.3	155.8	31.9	3.0	40.6	25.6	140.7	14.5	120.0	2,354
1988	45.0	545.0	228.2	701.1	129.3	55.6	89.8	164.0	40.2	1.5	43.6	23.6	153.2	14.6	118.0	2,484
1989[1]	45.0	535.0	208.0	684.1	151.2	56.0	90.5	186.8	39.5	1.8	38.4	22.1	136.0	17.0	125.0	2,473
1990[2]	45.0	530.0	233.2	717.0	155.0	55.0	90.0	197.0	39.1	1.8	45.1	23.0	140.0	19.8	125.0	2,556

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.* T.677

World Tea Exports from Producing Countries In Thousands of Metric Tons

Year	Argentina	Bangladesh	Brazil	China	India	Indonesia	Japan	Kenya	Malawi	Mozambique	Papua N. Guinea	Sri Lanka (Ceylon)	Taiwan	Vietnam	Zimbabwe	Grand Total
1978	31.0	30.9	7.8	86.9	176.1	56.2	3.4	85.0	30.6	16.7	7.0	192.6	20.4		7.6	795.1
1979	29.6	31.9	7.3	106.8	199.6	53.6	3.1	94.0	31.0	18.2	7.0	187.5	19.3		7.8	834.9
1980	33.5	31.0	7.9	108.0	224.0	67.7	2.7	74.8	31.3	18.0	7.9	184.5	18.2		6.2	858.8
1981	25.8	29.2	8.2	92.0	241.2	71.3	2.7	75.6	31.5	18.0	7.0	182.8	15.5		6.4	849.8
1982	33.1	34.4	9.0	105.8	189.9	63.7	2.5	79.8	37.1	19.0	6.5	181.1	10.0	9.5	7.2	819.5
1983	44.7	30.0	8.1	125.1	208.5	68.6	2.1	100.6	35.8	13.4	7.2	157.8	11.6	10.0	8.3	867.7
1984	42.1	23.1	9.3	145.3	217.0	85.7	2.8	91.2	37.2	7.6	7.5	204.2	11.9	11.0	9.8	942.7
1985	30.7	30.3	8.8	136.9	214.0	90.1	1.8	126.1	37.8	3.2	7.0	197.6	9.1	12.0	10.0	957.1
1986	36.3	27.7	10.9	172.0	203.1	79.0	1.3	116.5	40.2	1.8	5.2	207.6	9.0	12.5	11.8	977.5
1987	33.6	21.6	8.1	174.3	201.9	90.4	1.1	135.0	33.4	2.1	5.5	200.8	7.4	13.0	10.1	978.6
1988	34.3	26.2	9.7	198.3	221.5	92.7	1.3	138.2	37.0	.8	5.8	219.7	7.6	13.5	14.2	1,058.6
1989[1]	43.3	23.4	9.4	204.6	220.7	114.7	.7	163.2	39.9	1.2	5.5	203.8	6.9	13.5	14.0	1,129.6

[1] Preliminary. *Source: Foreign Agricultural Service, U.S.D.A.* T.678

Salient Statistics of Tea in the United States In Thousands of Metric Tons

Year	U.S. Imports from:													Sales by U.S. Retail Stores					
	Brazil	Argentina	Sri Lanka (Ceylon)	China (Mainland)	India	Indonesia	Japan	Kenya[2]	Mozambique	Netherlands	Malawi	Taiwan	Total	Tea Bags	Loose Tea	Instant Tea	Instant Mixes	Herbal	Total Quantity
1975		1.8	18.3	2.0	6.8	12.9	1.7	8.4	2.7	2.4	2.2	4.0	72.3	31.6	4.1	19.8	8.0		63.5
1976		2.1	21.1	3.0	8.0	11.6	3.2	10.7	2.0	1.3	4.1	4.8	82.2	33.8	4.2	19.6	8.5		66.2
1977		4.9	16.6	4.2	12.3	14.7	3.4	9.5	2.3	3.0	5.6	5.7	92.1	36.2	5.2	20.0	10.7		72.1
1978	2.0	6.7	14.0	2.9	1.7	10.7	3.2	8.2	1.4	4.1	4.2	3.0	68.8	35.5	4.4	18.7	11.7		70.3
1979	3.5	7.0	14.7	6.5	5.9	11.2	2.9	9.4	2.4	4.7	2.5	2.3	79.2	36.1	4.1	18.0	11.7		69.9
1980	2.8	10.3	12.2	8.0	4.2	13.9	2.5	6.8	5.0	5.9	2.1	3.1	83.8	37.9	3.7	17.1	12.1	.6	70.8
1981	3.5	10.0	13.0	7.1	4.7	14.7	2.5	5.5	4.2	7.7	2.4	4.2	86.3	39.7	3.3	15.9	12.0	1.0	70.8
1982	3.5	12.2	12.4	6.9	2.9	14.0	2.4	6.9	4.0	6.1	1.4	3.8	82.8	40.6	3.0	14.9	11.7	1.9	70.3
1983	3.9	15.1	8.1	6.4	2.9	14.4	1.8	4.5	3.5	4.7	1.3	3.5	77.3	41.9	2.7	14.9	13.1	2.1	72.6
1984	3.6	18.1	9.4	9.6	3.8	15.5	2.1	3.9	2.2	4.8	.9	6.3	88.3	40.7	2.3	13.3	12.2	2.1	68.5
1985	4.3	15.2	9.8	10.9	2.9	12.8	2.1	4.2	.7	4.2	.9	2.2	79.2	41.0	2.1	12.7	11.4	2.2	67.1
1986	5.6	16.4	7.8	16.9	3.9	16.3	1.2	4.3	.3	4.1	1.2	1.5	90.5	40.4	1.8	12.1	10.6	2.4	64.9
1987	5.4	15.9	4.8	16.7	3.0	10.4	1.2	4.1	.2	3.3	2.0	.9	77.4	32.5	1.1	7.2	10.4	2.1	51.3
1988	4.1	13.8	5.9	23.0	3.6	14.4	1.1	6.2	.1	3.8	1.6	1.0	90.1	31.8	.9	6.5	10.6	2.2	49.9
1989[1]	4.7	17.2	5.7	19.6	2.9	12.3	.6	6.0	.2	2.5	1.9	.9	89.6	30.9	.9	5.9	10.8	2.2	48.5
1990[1]	3.9	17.1	3.8	19.6	2.6	10.7	.3	4.0	.1	2.6	1.6	1.8	79.8	30.9	.8	5.7	11.0	2.3	48.4

[1] Preliminary. *Sources: Foreign Agricultural Service, U.S.D.A.; Bureau of Census*

T.675

U.S. Per Capita Consumption of Specified Beverages In Gallons

Year	Soft Drinks	Coffee[2]	Beer	Milk	Tea[2]	Bottled Water	Juices	Powdered Drinks	Wine[3]	Distilled Spirits
1980	34.2	27.4	24.3	20.6	7.3	2.7	6.9	6.0	2.1	2.0
1982	35.6	26.6	24.4	19.7	7.5	3.3	6.8	6.0	2.2	1.9
1984	38.8	26.4	23.9	19.7	7.2	4.0	6.6	6.4	2.3	1.9
1986	42.1	25.8	24.1	19.9	7.3	5.7	7.3	6.0	2.4	1.7
1988	46.0	25.4	23.7	19.3	7.4	7.2	7.1	5.2	2.2	1.6
1990[1]	47.5	25.2	23.4	19.0	7.2	8.8	6.9	5.3	2.0	1.4

[1] Preliminary. [2] Based on 3-year morning average. [3] Includes wine coolers beginning 1984. *Source: Beverage Industry Magazine*

London Auction Tea Prices In U.S. Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1979	102.4	97.4	98.3	96.7	96.5	96.6	95.9	97.3	92.8	99.4	102.0	101.0	98.0
1980	102.4	105.7	102.4	100.4	104.2	106.8	100.9	102.5	95.1	92.4	101.3	98.1	101.0
1981	98.6	101.2	100.5	97.9	94.7	90.4	84.6	80.0	81.7	87.4	91.3	91.6	91.7
1982	92.0	94.2	88.5	84.7	84.8	83.3	79.9	80.8	86.7	91.4	89.8	96.1	87.7
1983	98.5	93.1	89.8	92.1	91.0	85.2	86.6	90.6	99.0	117.4	158.8	163.8	105.5
1984	194.2	169.0	166.7	160.4	161.3	144.8	130.3	133.2	154.1	164.2	155.2	147.9	156.8
1985	143.1	127.3	110.4	98.6	75.2	74.6	71.5	72.2	73.3	78.7	80.2	75.3	90.0
1986	82.1	85.7	91.5	91.3	85.9	79.7	79.8	86.5	91.6	94.1	93.6	88.6	87.5
1987	89.7	83.6	83.2	67.9	65.4	60.8	69.5	72.3	72.7	84.1	87.4	94.0	77.6
1988	96.1	88.0	87.2	83.6	77.3	75.3	66.4	67.2	74.7	82.5	87.4	89.4	81.3
1989	87.5	82.4	80.6	77.3	76.7	80.4	88.1	83.2	97.7	118.4	106.7	115.5	91.2
1990	114.7	95.9	87.3	88.5	84.8	82.6	86.3	79.2	84.1	100.0	103.8	99.6	92.2
1991	107.2	90.2	83.6										

Source: International Tea Committee

T.679a

United States Imports of Tea In Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1986	7,676	5,996	9,852	8,619	7,143	6,790	8,950	6,634	8,215	6,742	6,788	6,389	89,794
1987	6,897	6,575	8,995	6,638	7,636	5,634	5,823	6,141	5,083	7,062	5,698	5,207	77,390
1988	6,521	7,167	8,060	9,055	8,435	8,793	7,987	7,873	5,860	5,642	6,792	7,959	90,143
1989[1]	6,610	5,966	8,290	7,170	7,193	7,124	7,394	6,790	7,070	7,634	6,964	7,053	85,257
1990													

[1] Preliminary. *Source: Department of Commerce*

T.679

Tin

With the mess of the ITC's 1985 tin default finally out the way, the market appeared to be in a condition to stage a price recovery in 1992, if certain other troublesome aspects of the world tin situation were resolved.

Many traders felt that less than 10,000 tonnes of the 43,000 tonnes originally seized by creditor banks were still left to sell back into the market. With efforts under way to curtail runaway production in Brazil and with China being accepted into the Association of Tin Producing Countries (ATPC) in October 1991, a price recovery in 1992 was possible.

That a recovery was needed was seen by the fact that tin prices fell to the lowest levels seen since the early 1970s, around 5,500 sterling per tonne. Consequently, the ATPC in late October decided to make a concerted effort to cut back on global tin exports. Cutting back by 9.1 percent from 1991's quota of 95,849 tonnes would put 1992's export quota at 87,091 tonnes, which was expected to bolster prices.

The ATPC's stated goal was to get global stocks down to around 20,000 tonnes, where a competitive tin price could be received. Stocks by 1992's end were expected to decline to around 27,000 tonnes and then to 20,000 tonnes by the 1993 target date.

After taking a strong battering from competing metals, tin usage may begin to stabilize, and according to the World Bank's tin usage study, released in April 1991, "Tin's place as an industrial base metal...appears secure...and further erosion in its consumption may be unlikely."

Also likely to help stabilize tin prices in the future was the new restriction placed on the operation of Brazil's Bom Futuro tin mine in the state of Rondonia by the state government. This highly controversial mine, discovered by timber interests in the late 1980s, has been the subject of fierce activity between wildcat miners and the Brazilian government. The mine was closed in August due to environmental concerns, based on the pollution of a nearby river. It reopened in September under stringent restrictions.

This mine was once the largest tin mine in Brazil, with 29,000 tonnes of production recorded in 1989, three years after its discovery in 1986. At one time, 20,000 miners worked there, but in recent years production has slowed considerably and was down to 17,000 tonnes in 1990 and even less in 1991. Some 1,500 miners now regularly work the huge pit located deep in the Amazon jungle.

The government said that it reached an accord with the remaining miners to work the mine in an environmentally safe manner. However, it was generally expected that the miners would be unable to meet their commitment to use non-polluting mining methods and that the controversy would continue throughout 1991.

Total U.S. consumption of tin for the first eight months of 1991 was 32,600 tonnes, comprised of 24,600 tonnes of primary consumption and 8,000 tonnes of secondary offtake. Total 1990 tin consumption was 44,363 tonnes.

Domestic use of tinplate for canning in the first eight months totaled 7,711 tonnes, compared with 1990's full-year offtake of 11,750 tonnes.

For the first seven months of 1991, the U.S. imported 16,273 tonnes of tin, compared with full-year 1990's 33,810 tonnes. Bolivia is the chief supplier to the U.S., providing 5,003 tonnes of imports for the period, followed by Chile with 2,635 tonnes and Indonesia with 2,635 tonnes. In 1990, Bolivian tin exports to the U.S. totaled 8,472 tonnes; supplies from Chile amounted to 4,339 tonnes and from Indonesia 4,695 tonnes.

Futures Market

Tin futures are traded on the London Metal Exchange and in Kuala Lumpur.

World Mine Production of Tin (Content of Ore) In Thousands of Metric Tons

Year	Australia	Bolivia[1]	Brazil	Burma	China[3]	Indonesia	Peru	Malaysia	Nigeria	Zimbabwe	South Africa	Thailand	United Kingdom	USSR	Zaire (Congo)	World Total
1987	7.7	8.1	27.4	.9	20.0	26.1	5.3	30.4	.8	1.4	1.4	15.0	4.0	16.0	2.4	173.1
1988	7.0	10.6	44.1	.5	25.0	29.6	4.4	28.9	.4	1.1	1.4	14.2	3.5	16.0	2.7	200.2
1989[2]	7.8	15.9	50.2	.4	25.0	31.3	5.1	31.0	.5	1.3	1.3	14.5	3.2	16.0	2.7	216.5
1990[3]	7.0	18.0	39.0	1	40	30		28	1			15	4	15	2	222.0
1991[3]	8.0	18.0	32.0	1	40	27		28	1			14	2	15	2	210.0

[1] Exports. [2] Preliminary. [3] Estimate. *Source: Bureau of Mines* T.682

World Smelter Primary Production of Tin In Thousands of Metric Tons

Year	Australia	Thailand	Bolivia	Brazil	China	Zimbabwe	Netherlands	Indonesia	Japan	Malaysia	Nigeria	Portugal	South Africa	United Kingdom	United States	USSR	Total
1985	2.7	18.0	12.9	24.7	15.0	1.2	5.3	20.9	1.4	45.5	1.1	.5	2.1	7.5	3.0	16.0	193.0
1986	1.4	19.7	7.7	27.4	15.0	1.1	5.1	22.1	1.3	43.8	.1	.2	2.0	9.2	3.2	16.0	184.2
1987	.6	15.4	2.7	29.4	20.0	1.0	3.8	24.2	.9	44.4	.6	.1	1.5	12.1	3.9	18.5	189.3
1988[2]	.4	14.7	5.5	41.9	29.5	.9	3.5	28.4	.8	49.9	.6	.1	1.4	9.0	1.5	18.5	215.1
1989[2]	.4	14.6	9.7	43.5	29.5	.8	4.9	29.9	.8	50.9	.6	.1	1.3	8.0	1.0	18.0	222.4
1990[3]	7.0	15.0	18.0	39.0	40.0			30.0		28.0	1.0	1.0		4.0		15.0	220.0
1991[3]	8.0	14.0	18.0	32.0	40.0			27.0		28.0	1.0	1.0		2.0		15.0	210.0

[1] Imports into the U.S. of tin concentrates (tin content). [2] Preliminary. [3] Estimate. *Source: Bureau of Mines* T.683

Tin Foreign Trade of the United States In Metric Tons[5]

		Imports (For Consumption)														
		Concentrates[3] (Ore)				Bars, Blocks, Pigs, etc.[4] (Metal)										
Year	Exports (Metal[2])	Total All Ore	Bolivia	Peru	Total All Metal	Australia	Belgium	Bolivia	Brazil	China	Indonesia	Malaysia	Nigeria	Singapore	Thailand	United Kingdom
1977	5,480	6,724	6,667	—	47,774	—	—	3,358	2,380	381	5,294	27,084	2	207	7,780	513
1978	4,692	3,873	3,541	—	46,776	—	155	5,768	1,810	1,571	5,664	23,448	—	230	6,865	468
1979	569	4,529	3,745	—	48,355	—	100	5,387	933	185	5,429	23,448	—	1,070	10,440	550
1980	595	840	528	—	45,982	145	190	5,597	2,031	858	6,477	15,548	770	864	12,414	416
1981	2,361	232	—	232	45,874	552	—	8,277	1,129	2,032	7,096	13,163	520	656	11,967	46
1982	5,769	1,961	192	1,416	27,939	334	10	4,340	2,409	2,632	5,744	2,364	124	600	9,116	55
1983	1,340	969	257	341	34,048	390	45	5,739	5,604	1,938	6,004	4,704	265	1,029	7,436	18
1984	1,429	3,272	271	2,502	41,224	288	137	5,438	10,220	1,640	4,985	6,622	60	781	9,531	583
1985	1,478	1,616	22	1,506	33,830	266	—	1,815	11,021	4,513	4,586	379	—	1,886	6,373	48
1986	1,547	3,936	259	3,676	35,768	94	—	4,893	9,456	2,955	4,149	6,230	—	691	1,901	730
1987	1,318	2,953	732	2,165	41,150	1,406	302	3,476	13,089	8,044	4,001	4,959	79	743	1,460	467
1988	1,209	2,837	923	1,914	43,493	1,342		3,926	16,213	6,223	5,334	5,317	41	1,342	670	1,354
1989[1]	904	216	—	149	33,988	1,420		4,795	10,572	4,793	5,162	2,392	—	456	180	391
1990[5]	658	—			33,810	1,660		8,472	6,535	4,339	4,695	3,873		40	60	227
1991[5]	800	—			30,000											

[1] Preliminary. [2] Ingots, Pigs & Bars. Excludes re-exports from 1979. [3] Tin content. [4] Also grain, or granulated. [5] Estimate.
Source: Department of Commerce

T.684

United States Tin (Pig) Consumption (Total) In Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1977	5,600	5,500	6,800	5,800	5,800	6,000	5,200	5,800	5,900	5,400	5,000	5,100	60,732
1978	5,400	5,000	5,500	5,200	5,700	5,400	4,600	5,200	5,200	5,300	5,400	4,900	61,531
1979	5,400	5,500	6,400	5,400	5,400	5,300	4,900	4,900	5,000	5,500	5,000	4,600	62,465
1980	5,500	5,300	5,750	5,300	4,600	4,100	3,700	3,900	4,150	4,300	4,050	3,750	56,362
1981	4,300	4,400	4,100	4,600	4,400	4,350	3,900	4,200	3,950	3,900	3,400	2,950	54,373
1982	3,400	3,300	3,750	5,100	5,000	5,100	4,900	4,700	4,700	4,600	4,500	4,400	53,450
1983	4,400	4,700	4,900	4,700	4,700	4,800	4,300	4,600	4,700	4,800	4,400	4,800	55,800
1984	4,600	4,300	5,300	3,900	4,500	4,400	4,100	4,400	4,100	4,000	3,300	3,500	50,400
1985	4,000	3,900	4,600	4,500	4,600	4,400	4,200	4,400	4,300	4,500	4,200	4,000	51,600
1986	4,300	4,000	4,200	4,500	4,400	4,400	4,100	4,100	4,000	4,300	3,900	3,900	50,100
1987	4,100	3,900	4,200	4,700	4,300	4,200	4,400	4,400	4,400	4,300	4,600	4,400	44,219
1988	4,600	4,700	4,800	4,700	5,300	5,600	5,300	5,300	5,500	5,600	4,900	4,900	45,073
1989	4,800	4,700	4,300	4,500	4,500	4,100	4,000	4,200	4,100	4,300	4,000	3,300	46,371
1990[1]	4,000	4,000	4,200	4,100	4,200	4,100	4,100	4,300	4,100	4,100	4,200	3,900	44,363
1991[1]	4,100	3,900	4,100	4,300	4,100	4,200	3,900	4,100	4,000	3,900			

[1] Preliminary. *Source: Bureau of Mines.*

T.681

United States Tin Stocks (Pig—Industrial) In Metric Tons

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1977	7,282	8,032	7,883	5,874	6,157	5,644	4,720	6,305	5,557	5,378	9,124	7,272
1978	8,441	7,626	6,628	6,291	7,785	8,139	7,846	7,817	7,260	5,774	4,975	5,666
1979	5,040	4,594	4,254	5,891	6,097	5,938	6,317	6,270	6,096	5,058	4,901	4,244
1980	4,238	7,720	6,882	7,527	5,443	7,263	6,592	6,544	6,051	5,180	5,208	5,086
1981	5,504	5,968	5,745	5,229	5,725	5,978	6,227	6,465	5,663	5,710	5,325	5,563
1982	5,988	3,872	3,490	3,829	5,222	4,953	4,653	3,888	2,910	2,940	2,970	3,437
1983	3,152	4,609	3,513	3,815	4,026	3,527	3,634	3,931	4,091	3,604	3,074	3,180
1984	3,020	2,968	2,268	2,840	2,646	3,119	2,795	2,688	2,837	2,495	2,512	2,326
1985	2,592	2,766	2,283	2,407	2,228	2,853	3,042	2,762	2,663	2,985	4,121	4,913
1986	5,665	5,310	4,692	3,097	4,127	3,987	4,032	4,166	4,246	3,497	3,554	4,681
1987	4,802	5,232	6,394	6,321	7,263	8,087	6,663	4,288	5,373	5,533	6,402	5,460
1988	4,428	4,490	5,989	5,631	5,868	6,128	6,456	5,665	4,350	4,171	4,371	4,781
1989	4,943	4,242	3,894	4,320	3,717	4,945	4,912	5,597	5,872	6,241	5,313	5,530
1990[1]	6,072	5,975	5,824	6,401	4,959	3,298	3,792	3,592	3,836	4,762	4,819	4,829
1991[1]	6,337	6,677	6,688	6,177	5,993	5,991	6,348	6,739	6,544	8,544		

[1] Preliminary. *Source: Bureau of Mines*

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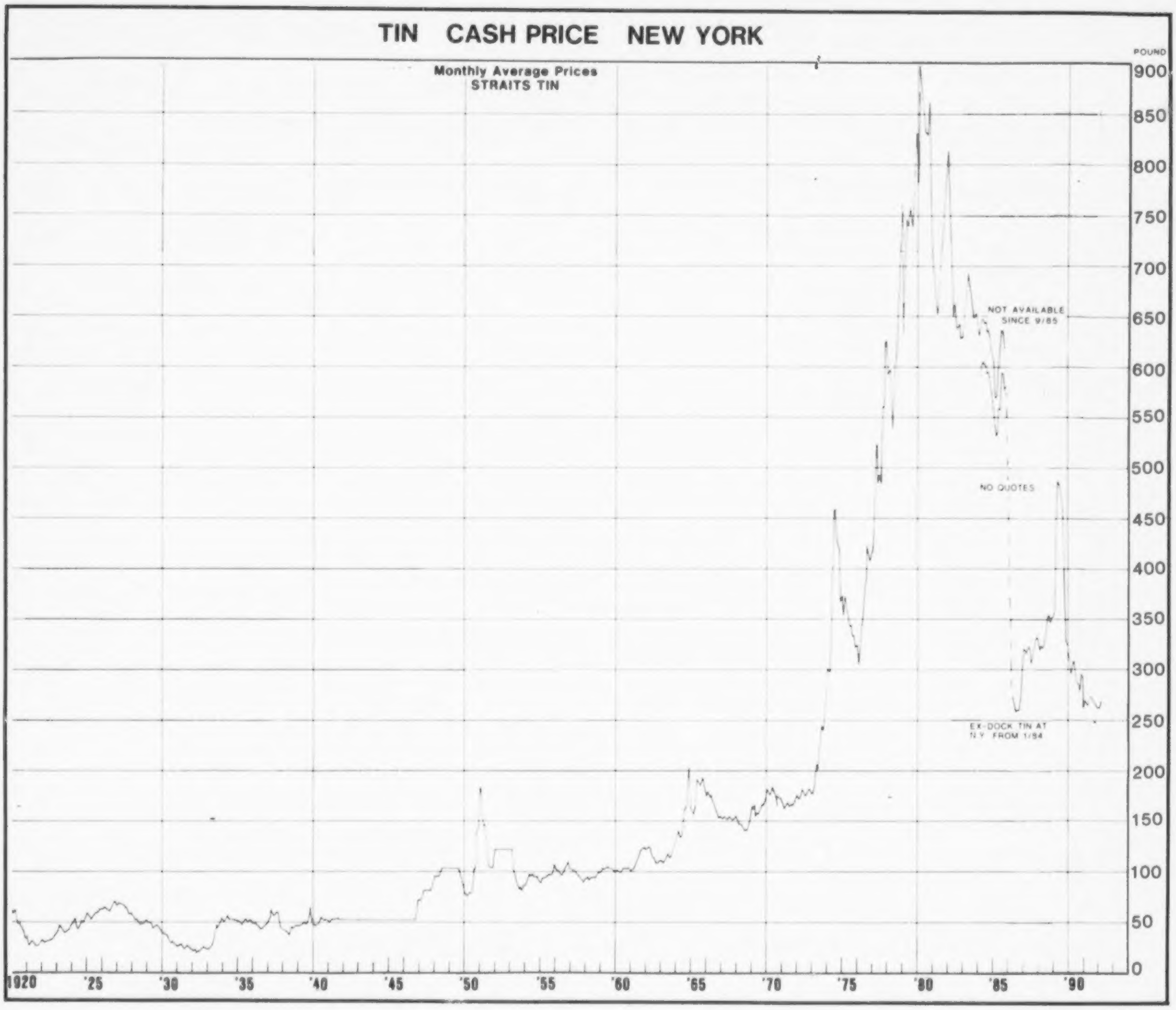
TIN CASH PRICE NEW YORK

Average Price of Ex–Dock Tin in New York[1] In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	591.19	595.93	557.48	537.85	570.58	600.95	606.21	641.80	679.66	739.69	758.84	695.86	631.34
1979	684.56	724.57	746.14	740.06	745.18	760.14	712.31	739.93	762.03	785.54	801.23	830.88	756.87
1980	836.46	866.39	900.23	872.21	861.84	845.19	836.95	834.61	861.92	832.92	788.67	751.36	840.73
1981	739.94	705.76	691.70	677.38	652.07	652.77	680.22	746.06	777.36	798.70	813.00	801.59	728.05
1982	787.41	749.93	669.51	649.58	662.35	643.00	638.00	636.33	644.33	627.94	627.93	630.18	663.88
1983	648.90	653.89	669.18	692.29	683.36	670.54	663.13	653.10	649.31	650.65	653.02	636.71	660.34
1984[1]	590.60	592.10	603.40	605.10	601.70	602.20	593.50	594.70	590.20	578.60	574.40	566.10	591.05
1985	542.10	532.00	533.80	559.10	557.70	576.30	594.90	593.80	578.60	580.50	N.Q.	N.Q.	564.88
1986	N.Q.	N.Q.	350.64	274.98	265.04	260.28	261.51	261.26	260.69	267.48	292.84	308.26	280.30
1987	321.56	320.39	317.66	320.98	323.60	316.96	307.59	314.63	321.86	324.81	332.21	327.65	320.83
1988	326.68	321.12	324.79	323.85	325.28	337.37	342.18	351.14	355.20	347.84	351.10	352.42	338.25
1989	355.80	377.77	419.64	486.72	484.42	474.15	458.64	415.80	395.99	379.67	329.10	324.79	408.54
1990	317.89	296.28	302.41	308.97	307.02	295.86	288.09	287.48	279.20	296.11	292.27	261.82	295.41
1991	269.97	268.00	264.51	265.78	271.78	272.30	270.55	269.02	265.86	264.50	262.26	262.05	267.21
1992	261.30												

[1] Data prior to 1984 are for Straits (Alloyer Price). *Source: American Metal Market*

T.685

Secondary Tin Recovered in the United States In Metric Tons

	Tin Content of Tinplate Produced				Tin Recovered by Form of Recovery								
		Tinplate (all forms)											
Year	Tinplate Waste (Gross Weight)	(Gross Weight)	Tin Content (Tonne)	Tin per tonne of plate (Kilograms)	Tin Metal	Bronze & Brass	Solder	Type Metal	Babbitt	Anti-Monial Lead	Chemical Compounds	Misc.[3]	Grand Total
1978					1,565	12,419	4,363	1,038	521	712	463	19	21,100
1979					1,767	12,090	5,282	584	441	867	433	29	21,493
1980					1,703	10,402	4,423	525	378	856	321	30	18,638
1981					1,587	8,894	3,035	576	261	791	265	29	15,438
1982	208,074	2,712,678	10,936	4.0	1,067	6,971	2,723	222	237	1,015	447	101	12,783
1983	166,186	2,586,810	9,328	3.6	1,180	8,517	3,072	172	185	803	182	94	14,205
1984	151,540	2,409,399	8,659	3.6	1,107	9,146	3,653	142	123	894	301	51	15,417
1985	146,041	2,215,042	9,321	4.2	1,302	8,045	3,565	122	88	791	186	10	14,109
1986	120,186	2,068,246	8,660	4.2	1,134	7,996	3,676	197	66	891	N.A.	17	13,977
1987	141,842	2,302,173	10,357	4.5	1,353	10,245	3,765	66	77	623	N.A.	30	16,159
1988	149,054	2,375,809	11,582	4.9	578	9,939	3,619	70	112	902	N.A.	29	15,249
1989[1]	153,542	2,263,769	11,764	5.2	569	10,305	3,225	46	116	952			15,213
1990[1]	156,419	2,467,205	11,750	4.8	186	13,397	2,876	46	28	742			17,275

[1] Preliminary. [2] Tin content. [3] Includes foil, cable lead & terne metal. *Source: Bureau of Mines*

T.687

U.S. Consumption of Primary and Secondary Tin In Metric Tons

			Net Receipts							
Year	Net Import Reliance as a % of Apparent Consumption	Industry Stocks Jan. 1[2]	Primary	Secondary	Scrap	Total	Available Supply	Stocks Dec. 31 (Total Available Less Total Processed)	Total Processed	Consumed in Mfg. Pdt's.
1979	80	13,584	50,126	2,636	10,659	63,421	77,005		64,067	62,465
1980	79	7,075	43,545	2,461	7,709	53,715	60,790	3,593	57,197	56,362
1981	77	8,835	41,162	5,692	8,050	54,904	63,739	8,640	55,099	54,373
1982	68	8,717	35,843	6,507	7,830	50,180	58,897	12,328	46,569	46,295
1983	73	7,549	36,494	5,412	7,435	49,341	56,890	11,098	45,792	45,547
1984	74	8,063	38,813	6,110	6,791	51,714	59,777	11,145	48,632	48,315
1985	72	8,430	38,006	8,904	7,471	54,381	62,811	13,928	48,883	48,669
1986	74	9,336	35,475	11,636	6,346	53,457	62,793	18,915	43,878	43,524
1987	74	9,876	38,441	11,707	6,635	56,743	66,619	21,888	44,731	44,219
1988	78	10,217	39,421	12,472	6,707	58,600	68,817	23,586	46,231	45,601
1989	77	9,242	37,670	10,901	8,168	56,739	65,981	19,186	46,795	46,371
1990[1]	71									
1991[3]	73									

[1] Preliminary. [2] Includes tin in transit in the U.S. [3] Estimate. *Source: Bureau of Mines*

T.686

Consumption of Tin in the United States by Finished Products In Metric Tons of Contained Tin

														Total	
Year	Alloys	Tin-plate[2]	Solder	Babbitt	Bronze & Brass	Collap. Tubes & Foil	Tinning	Chemicals[3]	Tin Powder	Type Metal	Bar Tin & Anodes	White Metal	Other	Primary	Secondary
1979	2,428	17,929	18,022	2,243	8,690	686	2,584	4,797	1,435	140	567	1,258	1,686	49,496	12,969
1980	134	16,346	15,618	2,380	7,478	526	2,577	N.A.	1,109	N.A.	486	914	8,794	44,342	12,020
1981	2,435	13,306	15,799	3,844	7,041	561	2,491	4,417	983	52	455	1,201	1,788	40,229	14,144
1982	N.A.	11,134	13,142	1,915	4,400	N.A.	1,887	N.A.	906	N.A.	509	1,177	11,225	33,019	13,276
1983	N.A.	9,462	14,120	2,881	4,583	N.A.	1,759	N.A.	793	N.A.	654	937	10,358	34,301	11,246
1984	N.A.	8,825	17,249	2,684	4,998	N.A.	1,748	N.A.	1,057	N.A.	526	958	11,396	37,201	11,114
1985	N.A.	9,321	18,621	1,488	4,330	N.A.	1,511	N.A.	976	7	466	937	12,110	36,524	12,145
1986	N.A.	8,660	15,810	1,324	3,502	N.A.	1,437	N.A.	1,002	N.A.	449	1,134	10,204	33,324	10,198
1987	N.A.	10,357	15,240	1,060	3,559	N.A.	1,398	N.A.	N.A.	N.A.	703	1,175	10,704	35,620	8,599
1988	N.A.	11,064	15,288	916	3,934	N.A.	1,406	N.A.	N.A.	N.A.	557	1,131	10,777	37,529	8,072
1989[1]	N.A.	11,764	16,370	794	3,693	N.A.	1,509		711		619	1,074	9,837	36,603	9,853
1990[4]	N.A.	11,750	15,578	763	3,163	N.A.	1,707		563		603	1,045	2,916	36,616	7,747
1991[4]														36,000	8,000

[1] Preliminary. [2] Includes small quantity of secondary pig tin & tin acquired in chemicals. [3] Including tin oxide. [4] Estimate.
Source: Bureau of Mines

T.688

Titanium

Approximately 45 percent of domestic titanium use is in the aircraft industry, where the metal's strength and light weight are an advantage. Titanium oxide is a paint pigment for which there are virtually no substitutes.

Rapid growth in demand for titanium occurred during the late 1980s, as airlines built their fleets, replacing older aircraft with a new generation of longer-range jets. Defense industry use also helped to push demand for the metal into the stratosphere. However, the outlook for titanium demand in the 1990s, shaped by recessionary factors and the emergence of the Soviet Commonwealth, an entity that may be more involved in internal matters than the USSR, bodes for slower demand for titanium metal.

U.S. production of titanium sponge for the first six months of 1991 totaled 8,144 tonnes, compared with full-year 1990 output of 24,679 tonnes. Ingot production for the same period was 14,205 tonnes, against a revised 1990 total of 36,809 tonnes.

Domestic usage of titanium sponge in first-half 1991 was 7,860 tonnes, versus full-year 1990's 23,207 tonnes. Scrap use was holding fairly steady at 6,175 tonnes in the six months, against full-year 1990's 14,973 tonnes. Ingot consumption was down, however, with the six-month figure at 13,803 tonnes, compared with full-1990's 35,320 tonnes.

Titanium dioxide is a pigment used in the production of white paints. Domestic output in 1990 was 978,659 tonnes, while for the first five months of 1991 only 246,737 tonnes were produced. Imports for consumption were 63,295 tonnes in January to May, versus 147,592 tonnes for all of 1990.

The U.S. exported 91,102 tonnes of titanium dioxide in the first five months of 1991, compared with full-year 1990's 202,288 tonnes. Titanium stocks reflected the overall slowdown in usage and totaled 81,808 tonnes in May 1991, versus end-year 1990's 61,721 tonnes. Apparent consumption of titanium dioxide suffered as the recession showed its face and for the first five months totaled 211,114 tonnes, compared with 1990's 925,447 tonnes.

Average Titanium Prices in the United States

							Dec. 31 in $ per pound		
Year	Ilmenite— F.O.B. Australian Ports[2] $ Tonne	Slag, 85% T_iO_2 F.O.B. Richards Bay, South Africa $ Tonne	Ilmenite Large Lots Bulk, F.O.B. U.S. East Coast $ Tonne	Rutile Large Lots Bulk, F.O.B. U.S. East Coast[3] $ Tonne[5]	Rutile Bagged F.O.B. Australian Ports $ Tonne[5]	Synthetic F.O.B. Mobile, Ala. — $ per Short Ton —	Titanium Metal Sponge	Titanium Dioxide Pigments Anatase	Titanium Dioxide Rutile
1979	50		—	390			3.98	0.530	0.590
1980	55		—	440		310	7.02	0.570	0.630
1981	70–75		39	450–475		340	7.65	0.690	0.750
1982	70–75	170–180	44–45	450–475		350	5.55	0.690	0.750
1983	70–75	187–198	44–45	400–430		350	5.55	0.690	0.750
1984	36–38	200	44–45	320–340	319–335	350	5.55	0.690	0.750
1985	38–42	212	50–56	350–360	315–328	350	3.50–4.00	.72–.73	0.780
1986	47–53	225–230	50–56	355–375	374–386	350	3.90–4.30	.75–.77	.80–.82
1987	46–52	235–245	50–56	355–375	420	386	4.00–4.20	.75–.77	.80–.82
1988	64–77	250–275	N.A.	N.A.	520	N.A.	4.25–4.75	.92–.95	.95–.97
1989[1]	67–75	275–300	N.A.	540–550	525	N.A.	4.80–5.30	1.01–1.02	1.04–1.05
1990[4]	73	298	N.A.	565	790	N.A.	4.75		1.01
1991[4]	75	310	N.A.	630	580	N.A.	4.75	.99–1.01	1.00

[1] Preliminary. [2] Prior to 1984 prices are for T_iO_2 F.O.B. Atlantic Seabord. [3] Prior to 1984 prices are for F.O.B. Eastern Ports. [4] Estimate. [5] Prices prior to 1988 are per short ton. *Source: U.S. Bureau of Mines*

T.690

Salient Statistics of Titanium[4] in the United States In Short Tons

	Ilmenite				Titanium Slag			Rutile		Exports of Titanium Products			
Year	Production (Gross Wt.)	Shipments (TiO_2)	Imports[3]	Stocks Dec. 31 (TiO_2)	Consumption (TiO_2)	Imports[3]	Stocks (TiO_2)	Imports[3, 4]	Stocks Dec. 31 (TiO_2)	Ores & Concentrates	Scrap	Dioxide & Pigments	Ingots, Billets, Etc.
1979	639,292	389,535	184,478	462,415	106,346	111,210	56,917	283,479	119,947	9,903	4,967	51,456	1,984
1980	556,646	358,181	357,488	584,280	133,933	194,994	127,981	281,605	147,670	17,830	3,300	45,795	3,278
1981	542,357	310,854	236,217	543,114	186,020	268,825	150,706	202,373	153,770	7,297	3,280	62,432	4,203
1982	263,391	145,725	348,366	470,776	168,433	247,845	103,667	163,325	165,762	21,682	4,287	72,823	2,196
1983	N.A.	N.A.	259,328	254,237	127,267	138,708	61,026	111,578	122,189	4,391	5,379	91,702	1,371
1984	N.A.	N.A.	409,605	128,507	152,534	209,839	52,397	180,508	96,186	8,651	4,109	106,124	2,071
1985	N.A.	N.A.	506,804	147,357	199,610	291,828	83,821	179,663	109,319	27,759	6,760	101,954	2,248
1986	N.A.	N.A.	465,617	169,723	221,959	361,872	65,213	174,820	107,491	5,314	6,403	112,227	2,119
1987			562,173	239,199	223,425	192,042	52,335	205,028	110,230	4,435	5,603	120,029	2,719
1988[1]			638,231	224,869	267,414	204,441	54,822	239,199	119,048	10,326	6,602	130,538	2,296
1989[2]			598,549	238,097	369,711	183,363	69,671	274,473	159,834	21,826	6,063	233,908	2,700
1990[2]			556,662	292,110		162,690	68,035	285,496	177,470	18,765	5,487	202,288	3,102
1991[2]			429,897	286,598		176,368	66,138	231,483	165,345	19,871	3,071	133,138	1,620

[1] Preliminary. [2] Estimate. [3] For consumption. [4] Natural & synthetic. *Source: Bureau of Mines*

T.693

World Production of Titanium Ilmenite Concentrates[2] In Thousands of Metric Tons[7]

Year	Australia[6]	Brazil	Canada[2]	China	Finland	India	Sierra Leone	Malaysia (Exports)	Norway	South Africa[3]	Sri Lanka (Ceylon)	Thai-land	United States[4]	USSR	World Total[2 & 3]
1979	1,327	14.5	525.8	N.A.	131.9	161.9		220.3	903.7	316.0	61.0		639.3	450.0	4,752
1980	1,553	18.6	934.4	N.A.	175.3	185.1		208.3	912.5	379.0	37.4		556.6	460.0	5,420
1981	1,478	17.5	836.9	150.0	178.0	179.1		190.4	727.1	408.0	88.2		542.4	470.0	5,266
1982	1,289	12.5	737.4	150.0	185.0	168.6		111.6	608.2	420.0	75.3		263.4	475.0	4,496
1983	1,003	33.6	700.0	154.0	180.7	148.2		245.5	612.8	460.0	90.1		N.A.	480.0	4,108
1984	1,681	45.1	800.0	154.0	184.0	154.3		296.0	718.5	460.0	112.5		N.A.	485.0	5,091
1985[7]	1,433	76.4	845.0	140.0	53.0	143.0	—	314.7	735.8	435.0	114.9	1.0	N.A.	445.0	4,737
1986	1,252	75.5	850.0	140.0	—	140.0	—	414.9	803.6	435.0	129.9	13.5	N.A.	450.0	4,705
1987	1,509	111.6	925.0	140.0	—	140.0	5.6	509.2	852.3	650.0	128.5	27.1	N.A.	455.0	5,454
1988	1,622	134.6	1,025	150.0	—	140.0	42.1	486.3	875.0	700.0	74.3	18.3		460.0	4,175
1989[1]	1,776	135.0	1,040	150.0	—	160.0	62.3	497.0	880.0	725.0	75.0	17.8		460.0	5,978
1990[8]	896	75	608	75	—	90	64	251	251	616	38			215	3,120
1991[8]	800	75	500	75	—	90		200	250	620	40			220	2,900

[1] Preliminary. [2] Includes Ti slag containing approx. 70% TiO_2. [3] Contains 85% of TiO_2 [4] Includes a mixed product containing ilmenite, leucoxene, & rutile. [5] Includes slag & concentrate. [6] Includes leucoxene. [7] Data prior to 1985 are in thousands of short tons. [8] Estimate. *Source: Bureau of Mines*

T.692

World Production of Titanium Rutile Concentrates In Metric Tons[3]

Year	South Africa	Australia	USSR	Brazil	Sierra Leone	India	Sri Lanka (Ceylon)	Thail-and	World Total
1979	46,000	302,620	11,000	484	8,267	5,445	16,176		389,992
1980	53,000	343,639	11,000	472	52,356	5,908	14,097		480,472
1981	55,000	254,432	11,000	190	55,992	7,397	14,662		398,673
1982	52,000	243,277	11,000	258	52,590	6,374	7,950		373,449
1983	62,000	180,089	11,000	510	79,146	6,100	8,921		347,766
1984	62,000	187,860	11,000	454	100,641	6,600	7,129		375,684
1985[3]	55,000	211,615	10,000	713	80,611	6,800	8,558	110	373,407
1986	55,000	215,774	10,000	495	97,100	7,000	8,443	48	393,860
1987	55,000	246,263	10,000	511	113,300	7,000	7,200	92	439,366
1988	55,000	230,637	10,000	1,142	126,358	5,000	5,255	128	433,520
1989[1]	60,000	266,000	10,000	1,000	128,340	5,000	5,200	150	475,690
1990[2]	56,000	215,000	9,000	2,000	137,000	5,000	5,000		430,000
1991[2]	60,000	200,000	10,000	2,000	140,000	5,000	5,000		420,000

[1] Preliminary. [2] Estimate. [3] Data prior to 1985 are short tons. *Source: Bureau of Mines*

T.691

World Production of Titanium Sponge Metal & U.S. Consumption of Titanium Concentrates

	Production of Titanium (in short tons[4]						U.S. Consumption of Titanium Concentrates, by Products (in short tons)						
	Sponge Metal[1]						Ilmenite (TiO_2 Content)			Rutile (TiO_2 Content)			
Year	China	USSR	United Kingdom	Japan	United States	Total	Pig-ments	Misc.	Total	Welding Rod Coatings	Pig-ments	Misc.	Total
1979		43,000	2,600	14,000	N.A.	—	475,342	11,886	487,228	9,947	230,776	52,189	292,912
1980		45,000	2,600	21,257	N.A.	—	502,108	11,207	513,315	6,876	211,599	59,407	277,882
1981	2,000	42,000	2,600	27,500	26,419	100,519	501,301	9,721	511,022	6,944	192,779	66,873	266,596
1982	1,500	44,000	2,600	18,600	15,600	82,300	345,618	6,775	352,393	5,275	184,403	35,435	225,113
1983	2,000	45,000	2,000	11,600	13,966	74,000	468,279	6,006	474,285	3,649	210,949	35,820	250,418
1984	2,000	46,000	2,500	16,938	24,326	92,000	492,658	6,319	498,977	3,911	231,808	62,920	298,639
1985	2,000	47,000	1,500	16,938	23,257	91,000	474,561	6,450	481,011	4,881	239,893	41,714	286,488
1986	2,000	48,000	1,500	18,000	17,500	87,000	511,070	1,655	512,725	7,667	244,178	57,539	309,384
1987	2,000	49,000	1,500	11,105	19,675	83,000	508,632	1,817	510,449	4,168	271,658	56,558	332,384
1988	2,000	46,000	1,500	16,500	24,000	88,000	429,147	590	429,737	3,737	262,998	64,641	331,376
1989	2,000	46,000	1,500	21,000	25,225	95,725	419,743	414	420,157	3,603	271,208	71,178	345,989
1990[2]	2,000	47,000	1,500	25,630	24,679	101,000			760,000				347,000
1991[2]	2,000	40,000	1,500	22,000	16,000	82,000			640,000				300,000

[1] Unconsolidated metal in various forms. [2] Estimated. [3] Preliminary. [4] Data is in *metric tons* for 1989 & 1990. [5] Data is in *metric tons* for 1988 & 1989. *Source: Bureau of Mines*

T.689

Tobacco

U.S. tobacco production in 1991 was forecast by USDA at 1.63 billion pounds, virtually the same as the previous year. Harvested acreage was estimated at 764,000, 4 percent more than in 1990. The national average yield was 2,134 pounds per acre, down 4 percent. The largest producing states were North Carolina, Kentucky and South Carolina, and the dominant type grown was flue-cured tobacco, followed by burley.

Domestic cigarette consumption in 1991 fell for the seventh year in a row to 518 billion units, and was down 3 percent from 1990. Since 1982, cigarette consumption has declined 20 percent. A number of factors have been cited for the drop, including higher prices, due to increased excise taxes, as well as a sharp decline in the social acceptability of smoking. Low-tar, low-nicotine cigarettes continue to account for a large proportion of usage. Per capita cigarette consumption by persons 18 years and older was 2,713 units, the lowest since 1942.

While domestic consumption has been on the decline, cigarette exports continue to grow. In 1990, shipments were almost 151 million units, while in 1991 they were estimated at 178 million. The primary markets for U.S. cigarettes were Belgium-Luxembourg, Japan, Hong Kong, and the United Arab Emirates. The export outlook was bright, due to rising incomes in some foreign countries and consumer preferences for American cigarettes. U.S. manufacturers have been successful in entering markets where exporters of other products have had difficulty. A manufacturer indicated it had reached an agreement to sell a large quantity of cigarettes to the former Soviet Union. The USSR imported over 5 billion U.S. cigarettes between July 1990 and June 1991.

Domestic retail prices of tobacco products in June 1991 were about 12 percent higher than a year earlier. Increases in prices of tobacco products over the last decade have been greater than any other item measured by the Consumer Price Index. With rises in retail prices of cigarettes, manufacturers have introduced lower-priced generic brands, which have been very popular. In 1991, eleven states and the District of Columbia enacted or imposed tax hikes, averaging about five cents for a pack of 20 units. The average state cigarette tax was 24.5 cents per pack. In January 1991, the Federal excise tax was raised 4 cents to 20 cents per pack.

U.S. consumption of large cigars was expected to decline from the previous year's 2.38 billion. The trend in cigar use has been lower over the last 20 years. The average number of cigars and cigarillos smoked by males 18 years and over was estimated at about 25, down close to 5 percent from 1990. Use of chewing tobacco was expected to decline about 3 percent, continuing a trend toward lower use. Snuff consumption has been rising over the last four years, possibly because of more restrictions on smoking in the workplace.

Domestic flue-cured tobacco production, used mostly for cigarettes, was estimated at 898 million pounds. Growers carried over 25 million pounds into the season, putting total supplies at 923 million pounds. Domestic consumption and exports of flue-cured have been rising. Higher domestic use was attributed to increased cigarette production for export. The major buyers of flue-cured tobacco were Germany, the Netherlands and Japan.

The U.S. burley tobacco crop was forecast to be 643 million pounds, 8 percent above the previous season.

World tobacco production in 1991 was projected at 7.1 million tonnes, up slightly from 1990. Increased production was seen in Argentina, Zimbabwe, Malawi and Bulgaria. Declines were forecast for Brazil, India, Turkey and Greece. Chinese production was expected to remain unchanged. World flue-cured tobacco output was estimated at just over 4 million tonnes, while burley tobacco was forecast at over 800,000 tonnes.

U.S. Government Program

The 1991 national average loan level for flue-cured tobacco was 152.8 cents per pound, four cents more than in 1990. The national marketing quota was 877.7 million pounds. The average loan level for the 1991 burley tobacco crop was 158.4 cents per pound, while the national marketing quota was 726 million pounds.

World Production of Leaf Tobacco In Thousands of Metric Tons (Farm Sales–Weight[3])

Year	United States	Brazil	Canada	China	USSR	France	Greece	India	Indonesia	Italy	Japan	Pakistan	Philippines	Turkey	Zimbabwe	World Total[1]
1983	648.2	378.0	111.7	1,381	385.0	44.5	111.7	590.6	126.0	156.0	136.7	64.6	91.7	234.0	99.0	6,044
1984	783.8	392.0	91.3	1,789	381.7	35.9	140.3	492.5	121.4	160.3	135.5	79.1	109.4	177.5	124.9	6,501
1985	686.9	411.0	85.9	3,425	381.0	34.9	148.5	472.8	172.5	166.5	116.2	87.4	75.9	170.5	108.7	6,993
1986	528.0	385.0	70.1	1,707	321.0	38.6	148.8	439.4	154.1	145.5	118.2	78.3	72.8	161.5	117.0	6,005
1987	539.3	410.0	61.4	1,945	296.0	33.9	144.0	460.2	154.0	162.1	104.4	69.0	79.4	184.7	131.5	6,160
1988	621.2	419.0	69.8	2,732	242.0	29.4	134.8	367.4	137.8	184.4	85.8	69.5	68.8	218.8	123.7	6,840
1989	620.2	462.0	75.6	2,830	239.0	29.2	115.8	492.8	146.9	197.3	74.4	71.1	73.3	269.5	135.2	7,110
1990[2]	737.2	435.0	63.1	2,628	257.0	28.3	134.4	564.4	154.5	214.6	80.5	68.0	70.1	298.2	139.8	7,061
1991[1]	730.5	419.0	67.7	2,483	257.0	26.6	177.7	479.5	159.1	213.0	70.9	75.9	78.8	242.6	178.0	6,971

[1] Estimated. [2] Preliminary. [3] Farm Sales–weight is about 10% above dry weight which is normally reported in trade statistics.

Source: Foreign Agricultural Service, U.S.D.A.

T.694

Production and Consumption of Tobacco Products in the United States

	Production								Consumption[3] Per Capita[4]						
	Chewing Tobacco														
Year	Plug	Twist	Loose-leaf	Total	Cigarettes	Cigars[2]	Smoking Tobacco	Snuff	Cigars[2]	Cigarettes	Cigars[2]	Cigarettes	Smoking Tobacco	Chewing Tobacco	Total Pdt.'s
	Million Pounds				Billion		Million Lbs.		Number		Pounds				
1983	14.1	1.7	71.0	86.8	667.0	3.14	28.0	46.7	43.8	3,488	.72	6.19	.40	1.05	7.19
1984	12.7	1.7	74.4	88.8	668.8	3.13	24.5	49.4	41.9	3,446	.69	5.89	.35	1.05	6.85
1985	11.4	1.5	74.0	86.9	665.3	2.83	22.1	48.8	37.9	3,370	.62	5.90	.32	1.01	6.81
1986	10.4	1.4	69.6	81.4	658.0	2.93	19.4	47.4	35.8	3,274	.59	5.72	.29	.93	6.56
1987	10.0	1.4	67.3	78.7	689.4	2.13	18.0	46.2	31.7	3,197	.52	5.50	.27	.89	6.30
1988	8.9	1.4	65.6	75.9	694.5	1.98	17.8	48.6	29.1	3,096	.47	5.35	.25	.86	6.11
1989	8.4	1.3	64.9	74.6	677.2	2.01	17.0	49.7	28.4	2,926	.47	4.93	.22	.82	5.68
1990[1]	7.4	1.2	64.3	72.9	710.3	1.90	16.4	53.1	26.7	2,817	.44	4.76	.20	.79	5.49
1991[5]	6.9	1.1	64.8	72.8	735.0	1.80	14.5	54.4	25.5	2,713	.42	4.72	.19	.77	5.42

[1] Preliminary. [2] Large cigars & cigarillos. [3] Consumption of tax-paid tobacco products; Represents unstemmed equivalent of tobacco used in the manufacture of these products. [4] 18 years old & over. [5] Estimate.

Sources: Bureau of the Census; Internal Revenue Service

T.695

Production of Tobacco in the United States In Millions of Pounds

Year	Conn.	Florida	Georgia	Indiana	Kentucky	Maryland	Massachusetts	North Car.	Ohio	Pa.	South Car.	Tenn.	Virginia	Wisconsin	W. Virg.
1983	3.4	17.6	96.4	13.0	324.6	29.7	.8	546.9	17.7	22.0	112.9	118.2	99.1	16.7	3.8
1984	2.8	17.9	85.5	18.8	530.1	30.4	.8	590.0	26.5	22.4	105.5	154.6	115.9	16.4	4.5
1985	3.3	16.3	82.1	14.6	428.4	26.6	.8	556.5	16.9	21.9	98.9	127.4	91.1	18.0	3.4
1986	3.1	13.3	67.9	12.1	314.9	21.1	.6	444.8	13.6	21.8	75.5	82.8	73.5	11.9	2.6
1987	2.8	13.8	72.2	11.1	304.8	13.3	.7	466.6	12.0	18.8	94.1	87.3	76.9	8.4	2.6
1988	3.0	17.2	85.9	10.9	355.0	12.0	.8	552.6	14.5	18.2	100.1	93.1	92.2	6.9	2.7
1989	2.8	17.8	87.2	13.2	366.6	8.1	.7	541.1	15.9	17.9	103.7	79.8	93.8	11.3	1.9
1990	3.0	19.0	103.8	13.4	442.3	9.6	.8	639.6	18.9	19.8	109.9	112.2	110.3	13.7	2.7
1991[1]	2.8	15.5	82.0	15.1	468.7	10.1	.8	624.9	22.6	19.9	114.6	125.5	110.2	15.3	3.0

[1] Preliminary, December estimate. *Source: Crop Reporting Board, U.S.D.A.*

T.696

Salient Statistics of Tobacco in the United States

						Tobacco (July–June)		U.S. Exports of				Stocks of Leaf Tobacco[4]			
												All Types			
Year	Acres Harvested 1,000 Acres	Yield Per Acre Lbs.	Production Million Lbs.	Farm Price ¢ Lb.	Farm Value Mil. $	Exports[2]	Imports[3]	Cigarettes	Cigars & Cheroots	Chewing Tobacco & Snuff	Smoking Tobacco[5]	Jan. 1	April 1	July 1	Oct. 1
						Mil. Lbs.		Millions		Metric Tons		Billion Pounds			
1983	789.2	1,811	1,429	174.6	2,496	526.5	515.9	60,698	130	1,073	10,345	5,367	5,288	4,900	5,209
1984	791.7	2,183	1,728	180.6	3,121	519.8	425.1	56,517	104	1,162	15,036	5,357	5,210	4,987	5,186
1985	688.0	2,197	1,512	164.5	2,487	541.6	449.1	58,967	59	525	19,156	5,434	5,247	4,997	5,150
1986	581.6	2,001	1,164	152.2	1,772	533.6	487.1	63,945	62	616	41,823	5,293	5,158	4,848	4,898
1987	586.3	2,028	1,189	157.3	1,870	500.0	480.3	100,246	145	650	43,332	4,979	4,775	4,436	4,454
1988	634.0	2,160	1,370	164.6	2,254	476.7	394.6	118,499	87	859	43,853	4,480	4,185	3,799	3,933
1989[1]	678.4	2,016	1,367	169.2	2,393	482.6	365.0	141,782	3	414	31,515	4,020	3,825	3,514	3,637
1990[1]	732.7	2,218	1,625	174.5	2,774	485.3	390.4	164,301	3	350	26,681	3,803	3,625	3,247	3,478
1991[1]	763.4	2,109	1,610									3,674	3,457	3,075	

[1] Preliminary. [2] Domestic. [3] For consumption. [4] Owned by dealer & mfgrs., converted to a farm-sales weight equivalent. [5] In packages & in bulk & other. *Source: Agricultural Marketing Service, U.S.D.A.*

T.700

Tobacco Production in the U.S., by Types In Millions of Pounds (Farm–Sales Weight)

Types	11–14	31	32	21	22	23	35–36	37	41	42–44	51	54	55	61
1983	821.3	481.4	37.4	4.6	24.3	8.2	14.3	.4	14.2	1.9	2.5	9.2	7.5	1.7
1984	864.6	712.2	38.1	6.1	37.6	12.9	19.0	.6	14.6	2.2	1.9	8.2	8.2	1.7
1985	800.3	573.3	32.9	4.5	34.5	11.4	15.2	.2	15.6	1.7	2.1	9.6	8.4	2.0
1986	644.6	407.9	27.8	3.5	26.6	11.2	10.9	.2	15.2	.5	2.0	5.5	6.4	1.7
1987	690.9	419.4	20.7	2.6	17.5	7.5	6.8	.1	11.4	.1	1.9	5.7	2.7	1.6
1988	813.2	477.2	18.4	2.9	19.8	8.0	7.4	.1	11.7	—	1.6	5.1	2.0	2.1
1989	808.4	482.6	17.8	2.5	18.5	8.0	6.4	.1	10.7	—	1.3	7.8	3.6	2.3
1990	939.2	596.3	16.3	2.8	22.9	9.2	7.5	.1	13.1	—	1.2	9.6	4.1	2.7
1991[1]	897.8	643.0	17.2	3.1	21.5	7.8	8.9	.1	13.1	—	1.3	9.5	5.8	2.3

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.*

T.701

U.S. Exports of Unmanufactured Tobacco In Millions of Pounds (Declared Weight)

Year	Australia	Belg.-Luxem.	Denmark	Egypt	France	W. Germany	Thailand	Ireland	Japan	Netherlands	Norway	Italy	Sweden	Switzerland	United Kingdom	Total U.S. Exports
1982	10.1	15.2	16.8	22.0	5.3	68.2	27.7	4.7	110.3	25.1	3.6	28.1	8.7	26.7	30.7	572.0
1983	9.7	9.6	20.2	21.6	7.3	58.0	9.1	3.2	114.1	28.4	5.7	32.2	12.4	16.8	27.8	524.4
1984	8.2	9.4	19.8	37.4	5.1	66.0	14.6	8.0	92.1	22.3	4.7	31.3	11.5	25.3	31.8	542.7
1985	7.3	11.5	16.2	41.2	9.9	76.7	17.8	7.3	102.0	20.9	3.3	28.7	15.8	23.9	18.4	548.9
1986	11.7	10.1	14.5	46.5	8.4	82.7	13.0	3.4	83.2	31.2	4.3	22.5	10.2	11.5	21.8	477.5
1987	8.5	8.2	15.6	11.0	6.7	69.3	7.5	1.2	105.4	32.1	3.3	22.4	8.0	12.6	16.7	430.0
1988	9.0	9.7	16.4	15.7	5.7	87.2	13.5	2.0	70.4	41.0	3.7	32.4	12.0	15.5	19.6	481.8
1989	6.2	12.3	13.8	.4	4.8	75.4	15.7	1.3	105.3	43.2	3.6	17.1	8.3	10.4	18.4	496.3
1990[1]	8.3	12.4	15.1	.1	5.7	75.9	22.3	1.6	106.5	45.3	3.4	19.3	9.5	13.3	20.5	492.5
1991[2]																

[1] Preliminary. [2] Estimate. *Source: Bureau of the Census* T.702

U.S. Salient Statistics for Flue-Cured Tobacco (Types 11–14)

Crop Year	Acres Harvested 1,000	Yield Acre 100 Lbs.	Marketings	Stocks, July 1	Total Supply	Exports	Dom. Disappearance	Total Disappearance	Farm Price ¢ Lb.	Crop Value Mil. $	Parity Price[2]	Price Support Level	Placed Under Gov't. Loan	Under Loan July 1
			Millions of Pounds								¢ Lb.		Mil. Lb.	
1982	472.3	21.3	994	2,145	3,139	456	479	935	178.5	1,774	254.0	169.9	259.9	518.7
1983–4	409.8	20.0	855	2,205	3,060	453	442	894	177.9	1,521	267.0	169.9	194.8	688.4
1984–5	392.0	22.1	850	2,165	3,015	481	454	935	181.1	1,539	284.0	169.9	158.6	797.5
1985–6	357.1	22.4	789	2,080	2,870	435	477	912	171.9	1,376	289.0	169.9	131.6	833.1
1986–7	308.3	21.0	667	1,958	2,625	393	480	873	152.7	1,019	288.0	143.8	55.2	790.4
1987–8	324.6	21.3	683	1,752	2,435	385	537	922	158.7	1,084	300.0	143.5	24.8	647.8
1988–9	366.4	22.2	796	1,513	2,309	363	522	885	161.3	1,311	314.0	144.2	15.2	466.1
1989–90	390.7	20.7	838	1,424	2,262	388	567	955	167.4	1,405		146.8	28.4	341.6
1990–1[1]	416.9	22.5	920	1,308	2,228	406	607	1,013	167.1	1,546		148.8	74.1	249.4
1991–2[3]	406.9	22.1	880	1,216	2,097							152.8		189.1

[1] Preliminary. [2] As of applicable date when support level was computed. [3] Estimate. *Source: Agricultural Marketing Service, U.S.D.A.* T.697

U.S. Salient Statistics for Burley Tobacco (Type 31)

Crop Year	Acres Harvested 1,000	Yield Per Acre 100 Lbs.	Marketings	Stocks, Oct. 1	Total Supply	Exports	Dom. Disappearance	Total Disappearance	Farm Price ¢ Lb.	Crop Value Mil. $	Parity Price[2]	Support Level	Under Gov't. Loan	Under Loan on Oct. 1
			Millions of Pounds								¢ Lb.		Mil. Lb.	
1982	346.2	23.7	777	1,121	1,898	135	444	579	181.0	1,406	266.0	175.1	269.2	.7
1983–4	292.6	16.5	527	1,319	1,845	112	389	501	177.3	934	280.0	175.1	255.6	226.1
1984–5	315.7	22.6	674	1,344	2,018	154	403	556	187.6	1,264	294.0	175.1	201.0	377.2
1985–6	255.1	22.5	542	1,462	2,004	151	425	576	159.4	866	297.0	148.8	82.7	548.9
1986–7	210.7	19.4	420	1,426	1,846	165	402	567	156.5	657	296.0	148.8	38.8	525.7
1987–8	215.9	19.4	428	1,279	1,706	157	478	635	156.3	669	306.0	148.8	90.0	329.7
1988–9	226.4	21.1	468	1,073	1,541	164	414	578	161.0	768	322.0	150.0	14.6	209.4
1989–90	244.4	19.8	498	963	1,461	169	446	614	167.2	898		153.2	.3	170.4
1990–1[1]	270.6	22.0	592	847	1,425	180	510	690	175.3	977		155.8	.0	112.5
1991–2[3]	309.5	20.8	645									158.4		60.0

[1] Preliminary. [2] As of applicable date when support level was computed. [3] Estimate. *Source: Agricultural Marketing Service, U.S.D.A.* T.698

Exports[1] of Tobacco from the United States In Thousands of Metric Tons[3]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1982	31.7	39.4	62.1	41.8	54.0	37.2	23.9	30.2	24.8	74.5	92.2	50.5	562.3
1983	24.2	38.3	46.0	44.0	33.6	32.7	28.6	36.0	26.4	51.7	87.9	60.3	509.8
1984	42.0	40.2	43.3	32.4	26.5	28.9	14.8	18.4	39.1	68.0	97.9	77.1	528.5
1985[3]	15.7	22.0	21.8	24.5	7.2	6.5	9.2	17.8	18.6	21.8	38.7	40.5	244.3
1986	9.8	14.5	22.1	21.0	12.9	10.1	7.4	10.7	10.0	15.0	30.1	48.1	211.7
1987	27.0	11.5	19.6	18.8	14.6	9.4	8.8	7.1	9.8	12.7	24.4	29.4	193.1
1988	32.7	17.1	21.3	25.7	15.8	10.3	11.8	11.2	14.3	14.8	20.9	20.6	216.5
1989[2]	25.9	25.4	22.2	19.4	14.7	11.7	7.0	10.7	17.7	18.0	32.1	19.6	224.4

[1] Represents unmanufactured tobacco, including stems, trimmings and scrap. [2] Preliminary. [3] Prior to 1985, the data is in millions of pounds. *Source: Department of Commerce* T.699

Tung Oil

Tung oil is derived from the seeds of the tung tree and used as a lubricant and drying agent. The tree is found mainly in China, which is the leading producer and exporter of tung oil. Argentina and Paraguay also produce and export the oil. World tung oil output amounts to about 100,000 tonnes a year, and China accounts for three-fourths of that.

Japan is a leading importer, purchasing around 12,000 to 14,000 tonnes a year. Imports by Hong Kong in calendar 1991 were estimated at 6,500 tonnes, higher than 4,200 a year earlier; the colony reexported most of that. The U.S imported 5,600 tonnes of tung oil in 1991, against 4,000 in 1990. In the past, the former Soviet Union purchased about 7,000 to 8,000 tonnes from foreign suppliers a year, but its imports were expected to fall in 1991. Imports by the European Community amount to about 5,000 tonnes a year.

Tung oil prices, ex-tank Rotterdam, averaged $1,365 a tonne in 1990/91 (October-September).

Supply and Distribution of Tung Oil in the United States In Thousands of Pounds

Year	Stocks Jan. 1	Production	Imports	Exports[2]	Total Supply	Apparent Disappearance	Factory Consumption (Crop Yr. Beg. Oct.) Total	Paint & Varnish	Resins & Plastics	Other Inedible Prods	Oil Acquired By CCC
1981	2,800		15,033				14,600	5,800	3,200	5,600	
1982[1]	2,200		14,398				12,700	5,300	2,800	4,000	
1983[1]	2,217		13,635				19,700	5,600	3,400	10,800	
1984[3]	3,137		13,929				12,400	5,100	4,500	2,900	
1985[3]	2,546		15,298				11,600	5,200	4,300		
1986[3]	3,514		12,291				12,200	3,700	6,100		
1987[3]	4,516		12,996				14,800	3,600	8,800		
1988[3]	3,224		14,123				12,500	2,300	5,100		

[1] Preliminary. [2] Also including re-exports. [3] Estimate. *Source: Economic Research Service, U.S.D.A.*

T.703

U.S. Consumption of Tung Oil in Inedible Products In Thousands of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	1,110	1,079	887	1,039	818	1,197	1,303	1,096	1,105	1,068	911	891	12,504
1986[1]	884	964	959	989	923	1,093	976	895	949	1,091	854	734	11,311
1987[1]	875	940	861	1,054	1,265	1,134	978	1,055	1,146	1,232	1,260	1,847	13,647
1988[1]	2,169	1,143	988	1,117	1,072	878	713	1,148	1,276	2,751	2,509	4,317	20,081
1989[1]	4,106	3,360	3,074	2,717	2,313	2,508	2,511	2,512	2,541	2,845	2,668	2,510	33,665
1990[1]	2,573	646	680	823	795	923	712	738	607	626	472	611	10,206
1991	—	1,953	—	—	1,555	—	—	1,336	—				

[1] Preliminary. *Source: Bureau of the Census*

U.S. Stocks of Tung Oil at Factories & Warehouses In Thousands of Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1984	3,137	2,867	3,042	2,634	2,609	2,102	1,815	1,802	1,476	1,192	2,113	2,029
1985[1]	2,546	2,589	2,353	1,642	1,707	1,599	1,564	2,163	2,272	1,526	1,798	2,617
1986[1]	3,514	3,347	2,651	3,036	2,847	2,255	2,691	2,742	2,151	2,212	3,350	4,123
1987[1]	4,516	3,937	2,830	3,582	2,996	865	2,768	3,699	3,779	3,325	3,625	3,768
1988[1]	3,224	4,501	5,296	4,374	4,304	3,500	3,913	3,797	3,422	4,999	3,821	3,498
1989[1]	3,739	3,012	3,867	3,526	3,225	3,216	4,836	3,860	2,640	5,450	4,649	5,037
1990[1]	5,448	4,648	2,744	2,529	3,164	2,859	2,003	1,553	1,880	1,018	1,913	2,374
1991[1]	—	2,997	—	—	1,379	—	—	964	—			

[1] Preliminary. *Source: Bureau of the Census*

T.703A

Average Price of Tung Oil[1] (Imported-Drums) F.O.B. New York In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1984	138.0	138.0	138.0	138.0	138.0	134.0	134.0	117.0	106.9	89.0	81.0	81.0	119.0
1985	81.0	81.0	81.0	81.0	81.0	N.A.	52.0	53.0	55.0	55.0	55.0	52.5	66.1
1986	52.0	46.5	46.1	44.5	43.5	40.1	36.5	34.8	33.0	32.0	32.0	32.0	31.2
1987	33.20	44.50	50.50	59.50	57.25	56.38	56.50	56.50	56.50	56.50	56.50	56.50	53.36
1988	57.63	58.00	58.00	56.88	53.50	52.00	51.00	49.80	49.00	48.25	44.75	44.00	51.65
1989	41.00	41.00	41.00	41.00	41.00	41.00	41.00	41.00	41.00	41.00	41.00	41.00	41.00
1990	41.00	41.00	41.00	59.00	59.00	58.25	58.00	58.00	58.00	55.50	62.00	70.00	55.06
1991	70.00	63.00	61.50	43.00	63.00	61.50	61.00	61.00	61.00	61.00	61.00	61.00	60.66

[1] Carlots, imported, f.o.b. New York. *Source: Economic Research Service, U.S.D.A.*

T.704

Tungsten

Only one U.S. tungsten mine, located in California, operated in 1991, and it was running at well below capacity. But apparent domestic demand for tungsten was virtually unchanged at 8,300 tonnes, compared with 8,287 tonnes in 1990. Approximately 7,000 tonnes of tungsten in concentrates was imported in 1991, and about 2,000 tonnes of scrap were reprocessed into intermediate materials. The Bureau of Mines put the value of primary tungsten materials consumed in the U.S. in 1991 at $175 million.

World mine production of the metal fell 4.6 percent in 1991 to 38,500 tonnes. China remained the leading producer with 20,000 tonnes, off from 21,000 in 1990.

The Orderly Marketing Agreement governing U.S. imports of Chinese ammonium paratungstate and tungstic acid expired on September 30, 1991. Earlier that month, the International Trade Administration ruled that Chinese tungsten concentrates were being sold in the U.S. at less than fair value and that a tariff of 151 percent should be levied on them. China accounted for 59 percent of U.S. imports through the first six months of 1991.

World Concentrate Production of Tungsten In Metric Tons of Contained Tungsten[3]

Year	Argentina	Australia	Austria	Bolivia	Brazil	Burma	China	Japan	Korea Rep. of	Mongolia	Portugal	Spain	Thailand	United States	USSR	World Total
1987	18	1,150	1,250	638	672	493	21,000	259	2,375	1,500	1,207	81	705	34	9,200	42,177
1988	17	1,281	1,235	900	433	307	21,000	266	2,029	2,000	1,382	80	651	N.A.	9,200	42,604
1989[1]	20	1,250	1,245	1,075	450	300	21,000	300	1,800	2,000	1,300	80	700	N.A.	9,300	43,280
1990[2]		900	1,250	1,200	422	300	21,000		1,255		1,405		200	N.A.	8,800	40,350
1991[2]		300	1,100	1,200	400	200	20,000		1,200		1,400		500	N.A.	8,000	38,500

[1] Preliminary. [2] Estimate. [3] Conversion Factors: WO_3 to W, multiply by 0.7931; 60% WO_3 to W, multiply by 0.4758.
Source: Bureau of Mines

T.706

Salient Statistics of Tungsten in the U.S. In Metric Tons of Contained Tungsten

					Consumption of Tungsten Products by End Uses									Stocks at End of Year (Concentrate)	
						Steel									
Year	Net Import Reliance as a % of Apparent Consumption	Production[1]	Shipments from Mines[1]	Total Consumption	Tool	Stainless & Heat Assisting	Alloy Steel[3]	Super-alloys	Cutting & Wear Resistant Materials	Pdt's. Made from Metal Powder	Miscellaneous	Chemicals & Ceramic	Exports	Consumers & Dealers	Producers[1]
1987	79	34	34	5,506	306	68	28	212	3,911	N.A.	2,662	41	2	329	21
1988	76	N.A.	N.A.	7,832	317	73	77	279	4,651	2,066	748	84	172	499	21
1989[2]	77	N.A.		7,725	290	62		258	5,018	1,828	476	52	203	1,261	10
1990[4]	73	N.A.		5,878										—— 1,150 ——	
1991[4]	75	N.A.		6,400											

[1] Primary concentrates. [2] Preliminary. [3] Other than tool. [4] Estimate. *Source: Bureau of Mines*

T.707

U.S. Imports[1] of Tungsten Ores & Concentrates and Ferrotungsten In Metric Tons[4] (Tungsten Content)

	Tungsten Ores and Concentrates Imported (For Consumption)												Ferrotungsten Imported			
Year	Australia	Bolivia	Brazil	Canada	South Korea	Mexico	Portugal	Spain	Thailand	Peru	Total 1,000 Pounds	Value Mil. $	Austria	Portugal	China	Total 1,000 Lbs.
1987	65	750	—	312	—	227	422	16	418	362	4,414	24.0	40	15	220	300
1988[2]	235	978	—	134	—	167	466	4	378	370	8,045	48.3	—	—	468	599
1989[4]	138	753	—	—	—	113	333	—	88	666	7,896	45.1	—	—	359	360
1990[4]											7,000					

[1] Imports for consumption. [2] Preliminary. [3] Estimate. *Source: Bureau of Mines*

T.708

Tungsten Prices In U.S. Dollars

	Markets		Reported Value, F.O.B. U.S. Mine[2]				Markets		Reported Value, F.O.B. U.S. Mine[2]		
Year	U.S.[1]	European	Total (Mil. $)	Avg. per Unit of WO_3	Avg. per Kilogram of Tungsten	Year	U.S.[1]	European[1]	Total (Mil. $)	Avg. per Unit of WO_3	Avg. per Kilogram of Tungsten
1984	85.00	87.00	13.4	90.63	11.43	1988	59.00	58.00	N.A.	N.A.	N.A.
1985	68.00	71.00	9.1	73.77	9.30	1989[3]	54.00	61.00	N.A.	N.A.	N.A.
1986	46.00	53.00	5.8	56.04	7.07	1990[4]	42.00	54.00			
1987	50.00	53.00	.2	50.34	6.35	1991[4]	60.00	58.00			

[1] Conc., Stu WO_3, Average (a short ton unit [stu] of tungsten trioxide [WO_3] contains 15,862 pounds of tungsten). [2] Values apply to finished concentrate & are in some instances f.o.b. custom mill. [3] Preliminary. [4] Estimate. *Source: Bureau of Mines*

T.709

Turkeys

Record turkey stocks and strong increases in production of competing meats contributed to lower turkey prices in 1991, exacerbated by the weak U.S. economy. The burdensome supply of turkeys since late 1990 can be partly attributed to aggressive expansion in the industry during the past several years, a response to strong growth in consumption of turkeys.

U.S. producers' 1991 returns were expected to be below breakeven, even in the fourth quarter--an unusual situation for the peak turkey consumption period. During the fourth quarter, it was not unusual to see supermarkets in some areas of the country promoting low priced or, in some cases, free turkeys with a minimum purchase amount. Nonetheless, wholesale prices recovered somewhat late in 1991, unlike the sharp price deterioration of a year earlier. Strong Thanksgiving movement helped to draw down record stocks, and ending stocks were below the 1990 level.

The U.S. is the world's leading turkey meat producer. Total U.S. turkey production was forecast to be about 4.86 billion pounds in 1991, about 3 percent higher than a year earlier, though that was the smallest increase in output since 1984. Production was likely to increase by about the same amount in 1992. The top three producing states for turkeys--North Carolina, Minnesota, and California--account for almost half of total U.S. output.

U.S. 1991 per capita turkey consumption was 19 pounds. This was up from 18.4 pounds in 1990, but indicated slowing consumption growth from the strong gains seen in the late 1980s. The industry has taken steps to make turkey more available away from home, and many feel that the introduction of turkey products on fast food menus is not too far away. Some fast food chains have offered turkey sandwiches in test markets. About 34 percent of U.S. 1991 turkey consumption took place in the fourth quarter, compared with a 40 percent share in 1985.

U.S. turkey exports increased by about 67 percent in 1991 to a record 90 million pounds. Mexico was the leading market, taking about 61 percent of U.S. exports through October. That country's production has remained low, despite higher consumption. Turkey parts comprised about 85 percent of U.S. turkey exports in 1991. U.S. turkey parts were a strong competitor against pork products in some markets because of favorable pricing.

U.S. per capita turkey consumption was expected to grow to 19.4 pounds in 1992. Wholesale prices were expected to average 57-63 cents/lb., compared with 61 cents in 1991. Net returns were expected to be close to breakeven in the second half of 1992, with fourth-quarter returns likely to be positive.

Salient Statistics of Turkeys in the U.S.

				(Liveweight)			Ready-to-Cook Basis						In Cents Per Lb.			
											Consumption				Wholesale Ready-to-Cook	
											Civilian		Production Costs			
Year	Turkey-Feed Price Ratio[3] Lbs.	(All Breeds) Poults Placed In Millions	Number Raised In Millions	Produced Million Lbs.	Farm Price ¢ Lb.	Value of Production Million $	Production Million Pounds	Commercial Storage Jan. 1 Million Pounds	Exports & Shipments Million Pounds	Military Million Pounds	Total Million Pounds	Per Capita Lb.	Feed	Total	Total Costs	3-Regions Composite Price
1977	3.8	148.4	136.4	2,563	35.5	910	2,023	203	56	11	1,992	9.3	22.6	31.6	51.4	56.2
1978	4.6	157.5	138.9	2,655	43.6	1,157	2,098	168	57	15	2,019	9.2	22.1	31.7	51.7	68.8
1979	4.2	180.0	156.5	2,958	41.1	1,214	2,344	175	57	19	2,204	9.9	25.3	35.8	58.2	67.0
1980	3.6	188.7	165.2	3,077	41.3	1,272	2,432	240	81	16	2,370	10.5	26.1	37.1	61.0	66.0
1981	3.1	187.3	170.9	3,264	38.2	1,248	2,577	198	68	15	2,450	10.7	30.2	41.2	66.1	64.0
1982	3.3	184.2	165.5	3,175	39.5	1,255	2,522	238	56	12	2,489	10.8	24.5	36.3	60.1	63.6
1983	3.0	182.1	170.7	3,336	38.0	1,269	2,649	204	54	13	2,609	11.2	26.6	39.8	65.4	63.5
1984	3.9	184.2	171.3	3,384	48.9	1,655	2,685	162	33	13	2,676	11.4	29.0	42.0	69.0	72.0
1985	4.5	198.7	185.3	3,704	49.1	1,820	2,942	125	34	13	2,870	12.1	21.4	35.1	60.1	77.3
1986	4.1	225.4	207.2	4,147	47.0	1,951	3,271	150	31	10	3,212	13.3	21.1	34.8	59.9	75.2
1987	3.2	264.2	240.4	4,895	34.8	1,703	3,832	178	37	15	3,686	15.1	19.4	33.1	57.6	57.0
1988	3.0	261.4	242.4	5,059	36.9	1,951	3,968	282	51		4,101	16.0	24.7	38.2	64.3	61.8
1989[1]	3.2	290.7	261.3	5,250	40.0	2,239	4,276	250	40		4,250	17.1	26.7	40.4	66.8	66.0
1990[2]	3.2	304.9	282.5	5,500	38.3		4,561	236	54		4,970	18.9	23.4	37.1	62.6	63.1
1991	3.5		287.5				4,800	306	80		5,282	19.5	23.1	36.8	62.3	65.6

[1] Preliminary. [2] Estimate. [3] Lbs. of feed = in value to 1 lb. of turkey live weight. *Source: Economic Research Service, U.S.D.A.* T.710

Turkey Per Capita Consumption in the U.S. by Quarters In Pounds

Year	First	Second	Third	Fourth	Total	Year	First	Second	Third	Fourth	Total
1982	1.8	2.1	2.6	4.3	10.7	1987	2.6	3.0	3.5	6.0	15.1
1983	2.1	2.2	2.5	4.4	11.2	1988	3.1	3.5	3.9	5.5	16.0
1984	2.0	2.2	2.7	4.5	11.4	1989	3.2	3.4	4.3	6.1	17.1
1985	2.1	2.3	2.9	4.9	12.1	1990[1]	3.7	3.9	4.4	6.4	18.4
1986	2.4	2.5	3.2	5.3	13.4	1991[1]	3.9	4.2	4.4		

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.711

TURKEYS

U.S. Basis of Turkey-Feed Price Ratio In Pounds[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1985	4.7	3.8	3.7	3.7	3.7	3.9	4.2	4.5	5.0	5.5	5.5	5.5	4.5
1986	3.4	3.4	3.5	3.5	3.8	4.3	4.5	4.6	4.7	4.9	4.8	4.0	4.1
1987	3.3	3.4	3.4	3.5	3.4	3.3	3.1	3.0	2.9	2.8	3.1	3.6	3.2
1988	2.9	2.6	2.5	2.7	2.8	3.0	3.0	3.1	3.4	3.6	3.6	2.9	3.0
1989	2.7	3.0	3.1	3.4	3.5	3.5	3.3	3.3	2.9	3.2	3.4	3.2	3.2
1990	3.0	2.8	3.1	3.1	3.2	3.2	3.2	3.4	3.4	3.6	3.6	3.1	3.2
1991[2]	2.9	2.9	3.2	3.1	3.3	3.4	3.5	3.6					

[1] Pounds of feed equal in value to one pound of turkey liveweight. [2] Preliminary. *Source: Agricultural Statistics Board, U.S.D.A.*

Wholesale Price of Turkeys[2] (Hens, 8–16 lbs.) N.Y. In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	— Yearly Average Price — Avg.	4-Region Retail	Farm Price[1]
1980	62.3	57.8	56.8	54.1	53.3	55.5	63.3	67.2	74.5	77.0	75.0	67.0	63.6		40.0
1981	59.4	60.7	63.8	61.2	63.5	66.2	66.8	61.8	59.5	56.4	57.3	51.7	60.7	97.7	38.4
1982	53.6	55.8	56.0	55.8	58.8	61.8	64.1	64.1	68.0	69.6	67.2	54.2	60.8	92.6	39.5
1983	53.6	54.9	56.0	54.4	56.6	60.9	58.5	57.6	65.0	65.1	67.0	76.1	60.5	91.7	38.0
1984	72.2	64.7	66.1	67.0	66.8	67.0	68.6	72.4	76.2	82.6	91.5	97.3	74.4	98.7	48.9
1985	74.0	65.6	67.0	64.6	62.6	68.1	72.8	78.4	82.4	90.2	93.1	86.9	75.5	105.2	49.1
1986	60.3	61.7	63.9	64.6	67.1	73.8	77.9	80.5	81.2	83.2	80.7	71.1	72.2	106.6	47.0
1987	55.3	58.5	60.3	58.3	55.3	55.7	56.3	56.1	56.1	54.7	60.7	66.5	57.8	101.2	34.8
1988	52.8	47.1	47.0	46.9	49.3	57.1	70.8	70.5	76.0	79.6	76.0	61.6	61.1	95.7	36.9
1989	59.0	62.2	65.7	68.3	72.1	73.0	66.4	62.6	57.9	67.8	72.5	72.7	66.7	99.4	40.0
1990	55.6	55.2	58.9	59.6	61.3	62.9	63.4	66.6	69.0	76.2	73.7	56.1	63.2	99.3	38.3
1991	53.5	55.8	59.1	60.3	62.3	62.7	63.4	64.7							

[1] Live weight. [2] Ready-to-cook. *Source: Economic Research Service, U.S.D.A.* T.713

Certified Federally Inspected Turkey Slaughter in the U.S. In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1980		378.6			528.3			711.6			713.9		2,232
1981		398.1			553.2			785.2			772.6		2,509
1982		410.4			527.9			761.5			759.1		2,459
1983		462.2			581.5			760.3			759.0		2,563
1984		432.3			589.3			777.2			775.3		2,574
1985		482.1			628.3			854.6			834.8		2,800
1986		174.6	193.6	205.2	236.4	275.8	307.6	299.4	331.4	365.8	307.1	248.2	3,133
1987	215.4	211.9	241.9	255.0	274.2	330.1	358.8	357.4	383.9	411.0	373.5	297.0	3,717
1988	254.6	266.9	314.0	276.6	331.3	373.2	323.3	377.3	365.8	395.7	371.7	272.8	3,923
1989[1]	254.1	248.1	301.3	268.8	356.9	388.6	360.4	430.3	385.7	422.6	423.1	334.9	4,175
1990[1]	319.0	297.8	366.6	328.4	384.1	389.2	395.7	444.0	382.9	477.1	446.2	328.6	4,734
1991[1]	368.7	322.0	330.1	377.1	398.4	385.0	401.7	424.0					

[1] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.714

Storage Stocks of Turkeys (Frozen) in the United States In Millions of Pounds

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1981	198.0	208.3	207.9	220.7	228.7	256.2	327.3	400.8	466.0	532.1	528.1	305.1
1982	238.4	236.9	236.4	232.8	—	—	281.7	—	—	435.8	—	—
1983	203.9	193.8	187.7	185.3	192.3	210.5	255.7	323.5	384.3	432.2	460.1	251.6
1984	161.8	161.5	145.8	144.4	142.2	180.9	226.3	278.2	331.3	390.6	415.4	195.7
1985	125.3	124.1	129.5	131.1	157.0	183.7	243.3	304.7	387.8	444.5	484.1	208.2
1986	150.2	159.2	163.6	150.5	188.9	229.5	297.8	388.1	449.3	511.6	543.2	249.0
1987	178.2	198.1	211.4	226.0	250.8	298.1	381.6	472.7	560.0	618.7	612.9	291.9
1988	282.4	281.8	321.5	339.0	370.7	410.1	456.8	496.2	551.9	572.8	583.3	303.5
1989	249.7	262.5	263.1	269.2	298.7	355.6	454.6	496.9	574.3	569.3	571.8	258.6
1990	235.9	267.1	276.3	318.8	354.4	405.6	489.3	541.7	593.1	620.4	622.9	334.2
1991[1]	310.2	301.1	342.5	362.4	406.9	448.0	498.9	568.2	619.0	655.4	645.9	306.5

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.712

Uranium

Uranium prices continued to decline in 1991, pressured by heavy U.S. and foreign supplies, which included large military stockpiles. Domestic prices ended 1991 at $8.75 a pound for concentrate, according to NUEXCO, the international nuclear fuel dealer. That was down from $9.70 at the close of 1990 and was the lowest since 1974.

U.S. production of uranium concentrate fell to 7.9 million pounds in 1991 from 8.9 million in 1990, NUEXCO estimated. Employment in the domestic industry fell further in 1991 from an estimated 1,300 individuals in 1990, as a number of U.S. mines were either closed or placed on standby in both years. Domestic employment peaked at over 22,000 in 1979. The U.S. is the second largest producer of uranium, after Canada.

Production in Canada in 1991 was expected to stabilize or grow slightly from the previous year's depressed level of 8,730 tonnes (which reflected the closure of two mines in Ontario in 1990). As recently as 1989, the country's output was 11,393 tonnes. Canada's Saskatchewan mines are among the world's lowest-cost producers. The nation exports 80 percent of its uranium production to the U.S., Japan, and the European Community.

A chief influence in the uranium trade in 1991 was a fear that cash-strapped Soviet republics would dump uranium on the world market. Soviet reserves are large, amounting to 140,000 to 160,000 tonnes, or almost 50 percent of world inventories. Russia, Kazakhstan and Tadzhikistan each account for about 30 percent of Soviet reserves, while another 10 percent is in the Ukraine.

The U.S. uranium mining and milling industries filed a petition with the Commerce Department in 1991, claiming that the sector had been injured by inexpensive uranium imports from the Soviet Union since 1988. The producers asked that anti-dumping duties of 132 to 160 percent be levied on Soviet uranium products.

At a conference of the Uranium Institute in London in September 1991, it was estimated that military stockpiles of the USSR, the U.S., Britain, France, and China totaled 250,000 tonnes of natural uranium. These stocks were enough to supply Western nuclear reactors for a period of five years.

Worldwide uranium requirements were estimated at 47,000 tonnes in 1991, and production was running well below that at approximately 26,000 tonnes. However, the difference was easily met by inventory drawdowns.

Free-World Production of Uranium Oxide (U_3O_8) Concentrate In Thousands of Short Tons

Year	Argentina	Australia	Canada	Spain	Namibia	Central Africa	France	Portugal	Niger	Brazil	Sweden	South Africa	United States	World Total
1980	.2	2.0	9.3		5.3		3.4		5.3	0		8.0	21.8	57.2
1981	.2	3.7	10.0		5.2		3.3		5.7	.1		8.0	19.2	57.1
1982	.2	5.7	10.5		4.9		3.7		5.5	.4		7.6	13.4	53.7
1983	.3	4.8	9.8		4.8		4.2		5.2	.4		7.5	10.6	49.3
1984		5.7	14.5		4.8	5.5	4.1					7.5	7.5	50.4
1985		8.4	28.3		8.8	10.5	8.3					12.7	11.1	90.3
1986[2]		10.8	30.5		9.0	10.7	8.5					12.2	13.7	97.0
1987[2]		9.8	32.3		9.2	9.9	8.6					10.3	12.5	95.0
1988[2]		9.3	32.4		9.1	9.5	8.3					9.9	13.3	94.2
1989[2]		9.5	29.4		8.0	10.2	8.4					7.6	13.5	89.1

[1] Less than 50 tons. [2] Preliminary. *Source: Bureau of Mines, Dept. of Energy; NUEXCO.* T.720

Month–End Uranium (U_3O_8) Transaction Values[1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1980	42.00	39.30	38.60	38.40	37.90	37.60	37.30	31.60	30.60	29.00	28.70	27.70
1981	27.20	27.20	27.00	25.70	25.70	24.50	24.40	24.30	23.90	24.10	24.10	24.00
1982	24.00	23.70	23.40	22.60	22.70	21.50	20.30	19.10	17.30	17.00	17.55	18.80
1983	19.35	20.00	21.35	21.40	22.35	22.45	23.50	23.60	23.65	23.65	23.85	23.85
1984	23.05	22.50	19.25	17.90	17.00	16.50	16.60	16.40	16.55	16.05	15.90	15.90
1985	16.20	15.70	15.05	14.90	14.45	14.60	14.75	15.10	15.10	15.75	15.80	16.55
1986	16.55	16.70	16.70	17.10	17.05	17.20	17.50	17.45	17.35	17.25	17.30	17.35
1987	17.35	16.90	16.95	17.00	17.20	17.10	17.30	17.55	18.20	18.05	17.80	17.20
1988	16.85	16.65	16.55	16.45	16.10	15.80	15.45	15.00	14.50	14.40	13.30	12.50
1989	12.25	12.20	11.25	11.00	10.75	10.45	9.95	9.80	9.80	9.65	9.55	9.40
1990	9.25	9.05	8.75	8.65	8.55	8.80	9.75	10.80	11.40	10.10		

[1] Transaction value is a weighted average price of recent natural uranium sales transactions, based on prices paid in transactions closed within the previous three-month period for which delivery is scheduled within one year of the transaction date; at least 10 transactions; and transactions involving a sum total of at least 2 million pounds of U_3O_8 equivalent. *Source: NUEXCO.*

Vanadium

Vanadium consumption continued to slow in 1991, reflecting the impact of the recession on the U.S. steel industry. The metal, in the form of ferrovanadium, is used primarily by the steel industry. Steel production in the U.S. was down more than 14 percent from the 1990 level, and there was little hope for an expansion in the foreseeable future.

Domestic consumption of ferrovanadium in the first eight months of 1991 totaled 1.81 million kilograms. Consumption of other vanadium alloys and vanadium metal in the same period amounted to 234,442 kilograms for a combined total of 2.05 million kilograms of vanadium use.

Vanadium consumption in the areas of oxide, vanadium chemicals, and vanadium aluminum alloy is not released by the U.S. Bureau of Mines, as this information is considered proprietary.

Vanadium is chiefly used in high-strength, low-alloy steel. For the first eight months of 1991, 616,120 kilograms of vanadium were consumed domestically in this form. The next major area of consumption is in carbon-based steel, with usage in the period amounting to 495,382 kilograms, followed by full-alloy steel with 489,099 kilograms. Total steel usage of vanadium in the period totaled 1.77 million kilograms.

The U.S. exports vanadium to seven nations--Belgium, Canada, Chile, Malaysia, Mexico, Taiwan and Venezuela. Total ferrovanadium exports for the first seven months of 1991 were 54,357 kilograms of vanadium content, with 23,909 going to Mexico and 23,813 to Canada.

The U.S. shipped 499,703 kilograms of vanadium pentoxide to twelve countries in the first seven months of 1991, for a total value of $3.14 million. Taking $1.33 million worth, Japan was the largest pentoxide customer, followed by the Netherlands with $370,872.

U.S. vanadium oxide and hydroxide exports totaled 473,942 kilograms in the same seven-month period, with a total value of $2.79 million. The largest importers of domestic vanadium oxides were Belgium, taking 303,910 kilograms and Canada with 33,725 kilograms.

A depressed demand pattern brought the price of vanadium pentoxide down to $2.20-.30 a pound in 1991 from the previous year's $3.95.

World Production of Vanadium from Ores and Concentrates In Short Tons of Contained Vanadium

Year	USSR	Chile	China	Finland	Australia	Norway	South West Africa[1]	South Africa	United States[1]	From[4] Petroleum – Residues, Ash – Japan	From[4] Petroleum – Residues, Ash – United States	Total	World Total
1981	10,500	140	5,000	3,431	77	380	—	13,908	5,126			2,587	41,149
1982	10,500	—	5,000	3,470	25	120	—	12,911	4,098	754	1,513	2,267	38,391
1983	10,500	—	5,000	3,516	—	—	—	9,737	2,171	778	893	1,671	32,595
1984	10,500	—	5,000	3,376	—	—	—	13,798	1,617	770	1,701	2,471	36,762
1985	10,500	—	5,000	2,350	—	—	—	15,449	N.A.	840	2,695	3,535	36,834
1986	10,600	—	5,000	—	—	—	—	16,930	N.A.	929	2,330	3,259	35,789
1987	10,600	—	5,000	—	—	—	—	15,715	N.A.	925	2,508	3,433	37,748
1988	10,600		5,000	—				18,060	N.A.	925	3,252	4,177	37,837
1989[2]	10,600		5,000	—				18,200	N.A.	925	2,633	3,558	37,358
1990[3]	9,500		6,700	—				17,000	N.A.				33,200
1991[3]	9,000		8,000	—				16,500	N.A.				33,500

[1] Recoverable vanadium. [2] Preliminary. [3] Estimate. [4] Production from petroleum residues, ashes, & spent catalysts. Mainly in Japan & the United States. *Source: Bureau of Mines* T.722

Salient Statistics of Vanadium in the United States In Short Tons of Contained Vanadium

Year	Vanadium in Ores – & Concentrates – Mine Production	Vanadium in Ores – & Concentrates – Recoverable Vanadium	Prod. of Vanad. Pentoxide (V_2O_5)	Consumer Stocks Dec. 31	Vanadium Consumed by Uses[2] Tool Steel	Cast Irons	High Strength Low Alloy	Non-ferrous Alloys	Chemicals	Carbon	Full Alloy	Total	$ Per Lb. Van. Pentoxide[3]	General Imports[5]	Exports Ore & Concentrates[4]	Exports Ferro-Vanadium (Gross	Exports Vanad. Pentoxide[7] Weight)
1981	5,852	5,126	11,367	683	584	42	2,123	852	56	1,278	1,832	6,863	3.52	2,435		435	
1982	4,093	4,098	8,689	326	273	20	1,148	461	29	698	811	3,496	3.50	1,112	418	326	1,582
1983	N.A.	2,171	4,344	374	426	10	966	505	19	577	716	3,277	3.50	58	154	775	2,648
1984	N.A.	1,617	4,678	449	610	18	1,636	905	22	683	816	4,761	3.50	633	317	469	3,712
1985	N.A.	N.A.	N.A.	360	522	22	1.383	788	14	1,135	944	4,883	3.50	303	325	453	1,527
1986	N.A.	N.A.	N.A.	314	510	24	1,136	652	11	1,026	856	4,308	3.50	2,013	429	513	1,544
1987	N.A.	N.A.	N.A.	372	465	25	1,336	684	12	1,197	816	4,653	3.50	2,264	479	343	1,818
1988	N.A.	N.A.		704	533	22	1,476	648	12	1,388	978	5,329	6.50	2,232	978	509	1,683
1989[1]	N.A.	N.A.		615	512	20	1,350	816	10	1,216	990	5,117	3.80	3,480	1,709	440	2,320
1990[6]	N.A.	N.A.			452							4,300	3.50	4,239	550	299	1,610
1991[6]					496									4,299		331	1,653

[1] Preliminary. [2] Represent about 90% of the total consumption. [3] Dealer export. [4] Also includes vanadium oxide & other compounds. [5] Ores, slags, residues. [6] Estimate. [7] Pentoxideanhydride. *Source: Bureau of Mines* T.723

Vegetables

Production of vegetables in the U.S. expanded slightly in 1991, as record levels of output of potatoes, dry beans, and processing tomatoes more than offset reductions in fresh vegetables and sweet potatoes. Total acreage planted to fresh vegetables fell by 3 percent during the year. Unusual weather patterns in California and Arizona in early 1991 led to sporadic vegetable supplies and strong prices throughout the marketing chain. A new strain of the sweetpotato whitefly, called the poinsettia strain, caused considerable damage to the lettuce, cauliflower, and broccoli crops in California and Arizona. Moreover, heavy rains and unusually high temperatures in Florida and other Southeastern states reduced the availability of many vegetables.

Per capita consumption of vegetables in the U.S. during 1991 was expected to remain near the 1990 level of 392 pounds, as higher potato and dry bean demand offset lower consumption of fresh vegetables and sweetpotatoes. Use of seven major vegetables for canning increased by 2 percent on a per capita basis to 93 pounds, because of larger supplies of sweet corn, tomatoes, and green peas. Consumption of potatoes was slated to grow in 1991, following a small increase in 1990.

U.S. exports of fresh vegetables and melon expanded by 13 percent during the first three quarters of 1991 to $612 million. Tomatoes and lettuce accounted for 30 percent of total fresh export value. Shipments of canned vegetables to other countries increased by 18 percent to $205 million. Frozen vegetable exports fell, however, in part because of slower economic activity worldwide.

U.S. imports of fresh vegetables and melon in the first three quarters of 1991 totaled $842 million, about 7 percent less than in 1990.

During the late 1980s through 1991, grower prices for vegetables and fruit showed a stronger tone than agricultural prices as a whole, according to the USDA. Emphasis on fresh produce in food stores and active exports were reasons for the overall strength in these markets. However, adverse weather in 1990 and 1991 in California, the Pacific Northwest, and Florida meant that prices were also very volatile. Domestic vegetable prices were firm in mid-1991, but declined later in the year.

Commercial and Fresh Vegetables: Index of Prices Received by U.S. Growers 1977 = 100

Item	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Commercial[1]	1986	138	119	124	148	146	120	119	123	131	134	143	120	130
	1987	150	140	156	137	132	128	134	128	129	123	213	174	145
	1988	208	136	143	133	116	124	128	152	145	130	139	131	140
	1989	186	168	152	171	153	148	165	140	132	141	123	142	152
	1990	246	217	141	117	123	119	134	139	146	158	166	141	154
	1991	146	142	166	169	214	172	146						
Fresh	1986	131	109	116	147	144	110	108	114	125	125	137	111	123
	1987	152	139	161	136	129	123	133	126	127	117	236	189	147
	1988	225	130	138	125	104	113	117	148	141	124	134	127	136
	1989	186	161	145	164	143	143	166	132	122	132	109	129	144
	1990	240	208	130	106	110	104	123	128	139	152	162	129	144
	1991	138	131	160	163	224	163	136						

Indexes are not seasonally adjusted. [1] Includes fresh and processing vegetables. *Source: National Agricultural Statistics Service, USDA*

U.S. Processed Vegetables: Monthly Producer Price Index 1982 = 100

Item	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Canned	1985	103.6	101.1	103.8	102.4	101.7	104.4	103.1	104.2	100.7	100.6	99.0	99.1	102.0
	1986	99.5	100.6	101.2	100.5	101.0	103.4	101.2	100.9	102.5	100.6	101.7	102.1	101.3
	1987	102.1	102.8	104.8	104.6	103.4	105.9	103.6	105.0	102.8	102.9	102.3	102.6	103.6
	1988	103.2	103.3	103.5	103.2	103.2	103.7	107.9	111.8	111.7	114.3	116.0	118.0	108.3
	1989	118.7	119.7	119.8	119.4	119.1	118.6	118.9	118.8	118.9	118.0	117.8	118.0	118.8
	1990	117.9	117.8	118.0	118.8	118.2	118.5	116.5	115.2	115.4	114.4	114.9	114.0	116.6
	1991	114.8	114.8	115.1	114.4	114.8	112.7	113.1						
Frozen	1985	105.5	106.1	106.2	106.7	106.6	106.8	106.9	106.8	106.8	106.9	106.7	106.7	106.6
	1986	106.8	106.8	106.9	106.3	106.7	107.0	106.5	106.6	106.6	106.4	106.5	106.7	106.7
	1987	107.2	107.6	107.4	107.8	107.5	107.4	107.4	107.5	107.7	107.2	106.6	106.7	107.3
	1988	107.0	106.5	107.0	106.7	106.5	106.6	107.1	109.2	110.0	110.4	112.0	112.7	108.5
	1989	113.1	114.3	114.8	115.3	115.4	115.7	115.5	116.2	116.2	115.5	116.6	117.1	115.5
	1990	117.6	117.9	118.4	118.9	120.1	117.6	118.1	118.3	118.5	118.6	118.6	119.0	118.5
	1991	118.4	118.5	118.3	118.6	118.0	117.7	117.5						

Source: Bureau of Labor Statistics, U.S. Department of Labor

VEGETABLES

U.S. Per Capita Use of Selected Commercially Produced Fresh and Processing Vegetables

Pounds, farm weight basis

Crop	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990[1]
Asparagus, all	0.8	0.8	—	—	0.8	0.9	1.1	1.1	1.0	1.0	1.0
Fresh	0.3	0.3	—	—	0.4	0.5	0.7	0.6	0.6	0.6	0.6
Canning	0.4	0.4	—	—	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Freezing	0.1	0.1	—	—	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Snap beans, all	5.9	6.3	5.7	5.5	5.4	5.6	5.3	5.4	5.5	5.8	5.6
Canning	4.5	4.6	4.2	4.0	3.6	3.7	3.8	3.7	3.8	3.9	3.7
Freezing	1.4	1.7	1.5	1.5	1.8	1.9	1.5	1.7	1.7	1.9	1.9
Broccoli, all[2]	3.0	3.3	3.7	3.8	4.5	4.8	5.2	5.8	6.6	6.7	5.8
Fresh	1.6	1.8	2.2	2.3	2.7	2.9	3.5	3.6	4.2	4.5	3.6
Freezing	1.4	1.5	1.5	1.5	1.8	1.9	1.7	2.2	2.4	2.2	2.2
Carrots, all[3]	10.4	10.5	10.6	10.5	12.0	10.8	10.8	11.8	11.7	10.8	11.3
Fresh	7.0	7.1	7.7	7.5	8.0	7.6	7.8	8.7	8.4	7.8	8.0
Canning	0.9	0.9	0.8	0.8	1.1	0.9	0.8	0.8	0.9	0.8	0.9
Freezing	2.5	2.5	2.1	2.2	2.9	2.3	2.2	2.3	2.4	2.2	2.4
Cauliflower, all[2]	2.1	2.5	2.5	2.5	3.1	3.2	3.6	3.6	3.8	3.6	3.1
Fresh	1.3	1.6	1.6	1.7	2.2	2.3	2.7	2.7	2.9	2.8	2.3
Freezing	0.8	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Celery, fresh	7.8	7.7	7.8	7.4	7.5	7.4	7.0	7.1	7.7	7.9	7.2
Sweet corn, all[4]	26.5	25.4	24.2	25.4	25.6	27.1	26.6	25.7	25.4	24.6	26.2
Fresh	7.2	7.1	7.1	7.3	7.6	7.6	7.2	7.4	6.7	7.5	7.1
Canning	12.9	12.1	11.4	11.5	10.1	11.7	11.9	10.5	10.1	9.3	10.7
Freezing	6.4	6.2	5.7	6.6	7.9	7.8	7.5	7.8	8.6	7.8	8.4
Cucumbers for pickles	5.6	5.5	—	—	5.2	5.8	5.3	5.1	5.2	5.1	5.2
Honeydews, fresh	1.5	1.6	2.0	1.9	1.9	2.2	2.6	2.4	2.5	2.6	2.0
Lettuce, fresh	26.7	25.7	25.6	23.2	25.9	24.7	23.1	26.8	27.5	29.2	27.9
Onions, fresh[5]	13.7	13.0	15.7	15.4	16.2	16.9	17.2	16.8	18.1	17.9	18.3
Green peas, all[6]	4.5	4.4	4.2	4.2	4.0	4.1	4.1	3.7	3.5	3.6	4.1
Canning	2.7	2.7	2.5	2.4	2.0	2.0	2.2	2.0	1.7	1.7	1.9
Freezing	1.8	1.7	1.7	1.8	2.0	2.1	1.9	1.7	1.8	1.9	2.2
Tomatoes, all	77.0	72.5	73.5	74.5	83.7	79.2	80.6	81.7	79.0	87.3	86.1
Fresh	13.4	13.2	13.4	13.7	15.3	16.1	17.2	17.0	17.9	17.9	16.1
Canning	63.6	59.3	60.1	60.8	68.4	63.1	63.4	64.7	61.1	69.4	70.0
Other, fresh[7]	1.8	1.8	1.9	2.1	1.9	2.3	1.9	2.3	2.2	2.3	2.1
Subtotal, all	187.3	181.0	177.4	176.4	197.7	195.0	194.4	199.3	199.7	208.4	205.9
Fresh	82.3	80.9	85.0	82.5	89.6	90.5	90.9	95.4	98.7	101.0	95.2
Canning	90.6	85.5	79.0	79.5	90.7	87.5	87.7	87.1	83.1	90.5	92.7
Freezing	14.4	14.6	13.4	14.4	17.4	17.0	15.8	16.8	17.9	16.9	18.0
Potatoes, all	114.3	116.0	114.4	118.1	122.1	122.4	125.7	125.9	123.2	126.2	126.8
Fresh	51.1	45.7	46.8	49.7	48.8	46.7	49.4	48.9	51.4	49.8	49.7
Canning	1.9	1.8	1.9	1.9	1.8	1.9	1.8	1.8	1.9	2.0	1.9
Freezing	35.2	41.2	38.4	38.9	43.4	45.1	45.8	47.1	42.6	46.1	46.1
Other processing	26.1	27.3	27.3	27.6	28.1	28.7	28.7	28.1	27.3	28.3	29.1
Sweet potatoes: Fresh & Frozen	4.5	4.9	5.5	4.6	5.0	5.4	4.4	4.5	4.1	4.1	4.7
Total, all items	306.1	301.9	297.3	299.1	324.8	322.8	324.5	329.7	327.0	338.7	337.4

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[1] Preliminary. [2] All production for processing broccoli and cauliflower is for freezing. [3] Industry allocation suggests that 27% of processing carrot production is for canning and 73% is for freezing. [4] On-cob basis. [5] Includes production for California, which is primarily for processing. [6] In-shell basis. [7] Includes artichokes, garlic, and eggplant. *Source: Economic Research Service, USDA*

Fresh Vegetables: Average Prices Received by U.S. Growers, Dollars Per Cwt

Commodity	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Season average
Broccoli	1988	35.10	15.60	31.10	14.40	13.10	16.60	19.60	38.90	37.20	27.20	21.30	32.80	24.00
	1989	21.70	14.10	16.70	21.20	15.40	12.50	20.60	17.90	25.20	25.80	23.20	34.30	21.00
	1990	14.60	18.10	14.00	13.10	17.30	13.00	22.50	26.10	31.70	37.00	41.70	38.20	22.30
	1991	19.50	13.60	49.80	23.00	16.70	14.10	12.70						
Carrots	1988	15.80	11.40	10.10	10.80	13.40	14.70	14.90	16.60	15.90	13.40	10.70	12.90	13.30
	1989	12.20	13.00	12.70	15.10	18.20	18.60	20.40	11.00	10.30	10.20	9.14	10.60	13.60
	1990	11.70	12.80	14.20	9.76	7.99	10.20	8.74	8.91	10.40	9.73	16.00	16.50	12.00
	1991	21.00	13.40	16.30	13.40	13.50	9.75	10.20						
Cauliflower	1988	32.90	20.10	50.00	24.30	21.40	24.70	23.10	29.40	32.30	25.40	23.80	39.20	28.10
	1989	24.30	20.10	35.80	31.10	21.60	25.70	26.40	28.60	24.50	29.60	36.80	28.50	28.10
	1990	17.20	27.90	21.00	22.10	18.80	20.50	22.20	28.30	25.70	31.70	34.80	32.80	25.20
	1991	21.60	23.10	50.30	33.30	24.20	29.90	14.00						
Celery	1988	18.00	13.00	7.48	11.40	13.60	8.74	11.00	15.20	16.10	11.30	12.50	11.30	11.90
	1989	15.40	14.20	8.64	15.20	22.50	15.50	17.80	14.80	9.08	9.42	9.54	15.20	13.20
	1990	19.10	11.50	6.80	8.31	13.50	8.89	8.72	8.43	10.30	11.70	14.00	11.30	10.80
	1991	13.20	12.70	9.09	11.00	19.20	13.00	18.70						
Corn, sweet	1988	15.30	24.50	17.80	18.90	11.20	14.20	16.00	15.40	15.00	19.40	23.30	18.10	14.80
	1989	25.30	19.90	26.80	24.20	14.40	16.90	19.80	18.20	16.30	14.50	14.30	17.00	16.90
	1990	—	—	17.60	15.40	15.60	14.60	17.00	14.70	12.70	13.80	18.60	13.20	15.00
	1991	18.20	30.10	25.80	19.70	17.10	17.30	16.20						
Lettuce	1988	35.00	10.10	14.20	7.03	7.64	10.70	7.32	13.00	11.10	11.50	11.20	14.10	14.70
	1989	18.80	12.40	13.10	8.60	6.85	13.40	16.20	10.50	12.60	14.50	8.79	7.15	12.60
	1990	9.43	6.58	7.70	8.23	7.94	8.03	12.40	14.20	18.30	19.70	18.70	10.50	11.50
	1991	10.10	6.80	10.60	8.93	23.10	9.46	6.71						
Tomatoes	1988	31.50	19.40	28.60	29.90	22.90	34.30	30.60	38.30	32.10	21.40	28.40	18.50	27.10
	1989	43.40	45.20	34.10	55.80	43.30	25.00	26.20	22.30	23.10	29.00	26.10	38.80	33.10
	1990	116.00	97.60	32.30	14.60	22.30	23.30	26.80	26.00	24.80	31.50	30.90	29.70	27.40
	1991	23.10	31.60	44.00	49.30	54.40	56.40	35.30						

Source: National Agricultural Statistics Service, USDA

Frozen Vegetables: July 1 Cold Storage Holdings In Million Pounds

Crop	1986	1987	1988	1989	1990	1991[1]	Change 1990–91[2] Percent
Asparagus	17	19	21	24	19	20	7
Lima beans	48	28	18	9	27	61	123
Snap beans	71	74	60	38	86	113	32
Broccoli	106	137	120	116	196	138	−30
Brussels sprouts	22	13	18	21	20	21	6
Carrots	103	117	115	114	138	110	−21
Cauliflower	40	39	45	31	45	56	25
Corn, sweet[3]	111	93	124	71	109	169	55
Mixed vegetables	57	51	46	48	62	59	−5
Okra	28	20	44	16	25	21	−14
Onions	34	24	29	37	32	31	−3
Black-eyed peas	13	6	7	4	7	13	101
Green peas	228	233	163	133	219	220	0
Peas and carrots	8	7	6	5	8	7	−12
Spinach	84	103	88	81	110	107	−3
Squash	41	44	58	48	45	49	9
Southern greens	30	17	31	26	22	31	45
Other vegetables	208	188	205	176	205	192	−6
Total	1,249	1,213	1,198	999	1,374	1,419	3
Potatoes	1,097	1,003	1,001	962	978	1,214	24
Grand total	2,346	2,216	2,199	1,961	2,351	2,633	12

[1] Preliminary. [2] Percentages are based on unrounded numbers. [3] Cut-basis with cob corn converted to cut-basis using a factor of 0.4706. *Source: National Agricultural Statistics Service, USDA*

Wheat

World wheat production in 1991/92 was forecast by USDA to be 545 million tonnes, almost 10 percent less than the year before. A smaller U.S. crop was responsible for nearly half the decline, and a 30 percent reduction in the Soviet crop to only 78 million tonnes was a factor. Reduced acreage, as well as a sharp drop-off in yields, explained the disappointing Soviet harvest. Offsetting this somewhat was a larger crop in the EC, where production of over 90 million tonnes was up almost 7 percent. China was the largest producer with 96 million tonnes, which was nonetheless down from the previous season.

India's harvest of 54 million tonnes was almost 10 percent higher. Canada's crop was nearly unchanged at 33 million tonnes, while Eastern Europe's output fell slightly to 39 million tonnes. Australia's crop was to decline by over 30 percent to 10 million tonnes, and Argentina's was also lower.

World exports were forecast to increase nearly 15 percent to just over 106 million tonnes. With the exception of Australia, virtually all of the major exporters were expected to ship more wheat. The U.S. was the dominant exporter with a market share of just over 40 percent. Canada was expected to boost shipments by over 15 percent to 24 million tonnes, while the EC was to ship 23 million, up 15 percent. Argentine exports were projected to increase almost 20 percent to nearly 6 million tonnes. With a much smaller crop, Australian shipments were likely to decline about 40 percent.

Soviet import needs were pegged at 23 million tonnes, almost 60 percent more than a year earlier. With a rising population and a smaller wheat crop, China's projected imports were 15 million tonnes, 50 percent more than in 1990/91.

Because of higher prices and smaller production, global consumption of wheat was forecast to decline 3 percent to 559 million tonnes. Soviet demand was expected to fall 10 percent to 106 million tonnes. China's consumption was put at 110 million tonnes, 3 percent more than a year earlier.

Global ending stocks in 1991/92 were slated to fall by nearly 10 percent to 130 million tonnes.

U.S. wheat production in 1991/92 was 1.98 billion bushels, almost 30 percent less than the previous season. Area planted to wheat totaled 69.9 million acres, down 7.3 million from 1990/91. This was the first season in which other crops could be seeded on wheat base acreage, and wheat could be planted on the base acreage of competing crops. Just over 2 million acres of wheat area were planted to other crops, while 400,000 acres of wheat were planted on the acreage of other crops. Harvested wheat acreage was 57.7 million, down from 69.3 million the previous year. The national average yield was 34.3 bushels per acre, down from 39.5 bushels.

Production of hard red winter wheat, grown in the Plains, fell 25 percent to just over 900 million bushels. The crop in Kansas, the largest producer, was smaller, due to a reduction in plantings and lower yields. The soft red winter crop was estimated at only 325 million bushels, down 40 percent from a year earlier. Soft winter wheat is mainly grown east of the Mississippi River and in the South. Crops in Illinois and Arkansas were hurt by drought and reductions in acreage. The quality of the crop declined, forcing more of it into feed channels.

The hard red spring wheat crop totaled just over 430 million bushels, down more than 20 percent. Acreage declined, because of the flexibility in planting allowed under the farm program. North Dakota was the largest producer of spring wheat.

Production of white wheat, grown in the Pacific Northwest, fell by over 30 percent to 220 million bushels. A winter freeze in Washington caused extensive damage to the crop. The durum wheat crop, produced in the northern Plains, was just over 100 million bushels, down about 15 percent.

Total domestic supplies were about 13 percent less than a year earlier. Use of wheat for food and seed was estimated at nearly 900 million bushels. The high price of wheat relative to feedgrains meant less wheat was fed to poultry and livestock.

U.S. exports were projected to rise by 5 percent to 1.12 billion bushels. The Soviets were granted U.S. export credits, allowing them to purchase wheat. The former USSR and China bought large quantities under the Export Enhancement Program.

Domestic stocks of wheat were very tight in 1991/92, and the carryout was put at 514 million bushels, 40 percent less than the previous season.

U.S. Farm Program

The target price was $4.00 a bushel in 1991, and the loan rate was $2.04. There was a 15 percent acreage reduction requirement.

Futures Market

Wheat futures and options are traded on the Chicago Board of Trade, the Kansas City Board of Trade and the Minneapolis Grain Exchange.

World Production of Wheat In Thousands of Metric Tons

Crop Year	Argentina	Australia	Canada	China	France	West Germany	India	Italy	Pakistan	Spain	Turkey	United Kingdom	USSR	United States	World Total[1]
1987–8	8,800	12,442	25,950	85,840	27,234	9,932	44,323	9,381	12,020	5,768	13,000	11,940	83,312	57,362	502,300
1988–9	8,400	14,100	16,000	85,400	29,660	11,922	46,200	7,945	12,675	6,173	15,000	11,750	84,400	49,320	500,300
1989–90	10,200	14,200	24,600	90,800	(EC-12-8,300)		54,100	7,412	14,400	5,200	12,500	14,200	92,300	55,428	537,600
1990–1[2]	12,500	15,400	32,700	98,200	(EC-12-84,700)		49,700		14,300		15,000		108,000	74,473	593,600
1991–2[1]	9,000	11,000	33,000	94,000	(EC-12-90,300)		54,000		14,500		16,000		83,000	53,906	550,300

[1] Estimated. [2] Preliminary. *Source: Foreign Agricultural Service, U.S.D.A.* T.724

World Wheat Supply & Demand In Millions of Metric Tons/Hectares

	Area Harvested	Yield	Production	World Trade	Utilization Total	Ending Stocks	Stocks as % of Util
1986/87	228.2	2.33	530.7	90.7	522.5	176.4	33.8
1987/88	220.0	2.28	502.3	105.0	530.3	148.4	28.0
1988/89	218.0	2.30	501.4	97.2	532.0	117.9	22.2
1989/90	226.3	2.38	537.6	96.2	534.4	121.1	22.7
1990/91[1]	231.9	2.56	593.8	93.4	571.5	143.4	25.1
1991–2[2]	223.4	2.47	550.9	105.8	558.4	135.9	24.3

[1] Preliminary. [2] Estimate. *Source: Foreign Agricultural Service, U.S.D.A.*

T.724a

Salient Statistics of Wheat in the United States

Crop Year	Planting Intentions 1,000 Acres	Acreage Harvested 1,000 Acres Winter	Spring	All	Avg.—All Yield Per Acre In Bushels	Value of Production Ths. $	Foreign Trade[5] Million Bushels Domestic Exports[2]	Imports[3]	Per Capita[1] Consumption In Pounds Flour	Cereal
1986–7	72,068	43,170	17,518	60,723	34.4	5,044,347	999	21.3	125	3.2
1987–8	65,829	39,332	16,613	55,945	37.7	5,497,712	1,598	16.1	129	3.3
1988–9	65,529	39,800	13,389	53,189	34.1	6,684,000	1,419	22.7	129	3.4
1989–90[4]	76,615	44,456	17,733	62,189	32.8	7,578,000	1,233	23.4	123	3.4
1990–1[4]	77,241	53,408	15,875	69,283	39.5	7,142,000	1,068	36.4		
1991–2[4]	69,906	42,593	15,100	57,693	34.3	5,546,000	1,125	40.0		

[1] Civilian only. [2] Includes flour milled from imported wheat. [3] Total wheat, flour & other products. [4] Preliminary. [5] Year beginning June. *Source: Economic Research Service, U.S.D.A.*

T.728

Supply and Distribution of Wheat in the United States In Millions of Bushels

Crop Yr. Beginning June	Supply: Stocks, June 1: On Farms	Mills, Elevators[3]	Total Stocks	Production	Imports[4]	Total Supply	Domestic Disappearance: Food	Seed	Feed & Residual[5]	Total	Exports[4]	Total Disappearance
1986–7	681.1	1,223.9	1,905.0	2,090.6	21.3	4,017	712.2	84.0	401.2	1,197.4	998.5	2,196
1987–8	560.0	1,260.9	1,820.9	2,107.7	16.1	3,945	720.7	85.0	280.3	1,086.0	1,597.8	2,684
1988–9	525.0	735.8	1,260.8	1,812.2	22.7	3,096	725.8	103.0	146.1	974.9	1,419.2	2,394
1989–90	289.0	412.6	701.6	2,036.6	23.4	2,762	753.0	100.4	138.5	991.9	1,233.3	2,225
1990–1[1]	212.5	324.0	536.5	2,736.4	23.0	3,309	795.9	90.3	489.4	1,375.6	1,068.0	2,444
1991–2[2]	341.2	524.7	865.9	1,981.0	40.0	2,886	800.0	97.0	350.0	1,247.0	1,125.0	2,372.0

[1] Preliminary. [2] Estimated. [3] Also warehouses and all off-farm storage not otherwise designated, including flour mills. [4] Imports & exports are for wheat, including flour & other products in terms of wheat. [5] Mostly feed use. *Source: Economic Research Service, U.S.D.A.*

T.737

Stocks, Production, and Exports of Wheat, by Classes In Millions of Bushels

Year Beginning June	Hard Spring: June 1 Stocks	Production	Exports[2]	Durum[3]: June 1 Stocks	Production	Exports[2]	Hard Winter: June 1 Stocks	Production	Exports[2]	Soft Red Winter: June 1 Stocks	Production	Exports[2]	White: June 1 Stocks	Production	Exports[2]
1986–7	498	451	199	121	98	82	1,009	1,017	429	79	292	114	198	232	175
1987–8	490	431	255	95	93	62	973	1,019	911	77	349	160	185	216	210
1988–9	402	181	195	83	45	20	567	882	639	75	473	315	135	232	250
1989–90	219	433	280	60	92	55	302	712	360	39	548	345	81	251	193
1990–1[1]	155	555	201	50	122	53	215	1,199	368	32	547	230	85	313	216
1991–2[4]	277	431	300	62	104	55	360	901	510	80	325	90	87	219	170

[1] Preliminary. [2] Includes flour made from U.S. wheat & shipments to territories. [3] Includes "Red Durum." [4] Estimate. *Source: Economic Research Service, U.S.D.A.*

T.727

Seeded Acreage, Yield and Production of All Wheat in the United States

Year	Seeded Acreage—1,000,000 Acres: Winter	Not Durum	Durum	All	Yield Per Harvested Acre—In Bushels: Winter	Not Durum	Durum	All	Production—1,000,000 Bushels: Winter	Not Durum	Durum	All
1987	48.8	13.7	3.3	65.8	39.8	33.7	28.2	37.7	1,565.4	449.7	92.6	2,107.7
1988	48.8	13.4	3.3	65.5	39.2	19.5	15.7	34.1	1,561.9	205.5	44.8	1,812.2
1989	55.1	17.7	3.8	76.6	35.0	28.8	25.1	32.7	1,454.6	489.7	92.2	2,036.6
1990[1]	57.0	16.7	3.6	77.3	49.9	15.9	3.5	69.3	2,031.0	583.1	122.4	2,736.4
1991[2]	51.0	15.6	3.3	69.9	39.4	15.1	3.2	57.7	1,372.2	504.6	104.0	1,981.0

[1] Preliminary. [2] Estimate. *Source: Crop Reporting Board, U.S.D.A.*

T.726

Production of Winter Wheat in the United States In Millions of Bushels

Year	Colorado	Idaho	Illinois	Indiana	Kansas	Michigan	Missouri	Montana	Nebraska	Ohio	Oklahoma	Oregon	Tennessee	Texas	Wash.	So Dakota
1982	81.5	53.0	67.5	43.3	458.5	23.0	74.8	80.6	101.5	51.6	227.7	59.4	29.9	144.0	125.4	36.3
1983	117.0	55.6	64.4	49.5	448.2	35.8	70.3	79.1	98.9	58.8	150.5	62.0	19.8	161.0	162.5	51.3
1984	110.4	56.7	70.4	48.3	431.2	45.6	84.1	67.0	81.0	48.4	190.8	66.2	21.4	150.0	148.8	61.2
1985	134.6	46.1	36.8	37.1	433.2	45.0	49.9	22.4	89.7	58.9	165.0	51.8	8.0	187.2	115.2	44.1
1986	92.8	51.9	36.1	30.1	336.6	30.6	18.8	64.0	76.0	48.3	150.8	53.9	10.7	120.0	102.9	57.6
1987	93.8	60.0	56.1	34.8	366.3	19.2	35.4	79.2	85.8	46.4	129.6	49.5	14.0	100.8	104.0	55.1
1988	75.9	50.8	67.5	35.0	323.0	26.0	76.0	39.9	72.0	46.0	172.8	46.9	21.5	89.6	108.5	21.6
1989	57.2	56.7	105.0	51.9	213.6	33.9	87.0	54.0	55.4	62.7	153.9	48.9	18.9	60.0	68.9	35.1
1990	84.2	69.0	88.8	50.4	472.0	41.3	76.0	87.5	85.5	79.7	201.6	54.6	17.6	130.2	138.6	57.6
1991[1]	71.3	49.0	44.8	28.8	363.0	24.1	48.0	72.0	67.2	52.9	140.0	41.6	7.7	84.0	40.6	45.5

[1] Preliminary *Source: Crop Reporting Board, U.S.D.A.* T.734

United States Official Winter Wheat Crop Production Reports In Thousands of Bushels

Crop Year	May 1	June 1	July 1	August 1	Sept. 1	Current December	Final
1982–3	2,063,336	2,131,214	2,124,854	2,095,554	2,106,149	2,108,246	2,073,560
1983–4	1,893,241	1,882,916	1,937,388	1,963,243	1,976,843	1,993,888	1,988,304
1984–5	1,979,366	1,972,776	2,021,918	2,045,088	2,036,028	2,060,646	2,060,266
1985–6	1,974,228	1,892,438	1,854,254	1,842,884	1,839,284	1,827,195	1,826,625
1986–7	1,603,127	1,578,277	1,553,026	1,532,526	1,532,526	1,519,143	1,520,433
1987–8	1,549,344	1,577,489	1,574,439	2,125,097	2,114,492	1,565,176	1,565,381
1988–9	1,620,257	1,570,417	1,568,052	1,554,812	1,560,970	1,561,145	1,561,910
1989–90	1,430,148	1,407,898	1,461,924	1,466,049	1,451,746	1,453,842	1,454,642
1990–1	2,091,614	2,089,234	2,035,087	2,054,287	2,036,059	——	2,030,874
1991–2	1,495,943	1,449,418	1,361,316	1,371,946	1,372,182	——	

Source: Crop Reporting Board, U.S.D.A. T.736

Production of All Spring Wheat in the United States In Millions of Bushels

	Durum Wheat							Other Spring Wheat									
Year	Arizona	California	Minnesota	Montana	North Dakota	South Dakota	Total Durum	Colorado	Idaho	Minnesota	Montana	North Dakota	Oregon	South Dakota	Utah	Washington	Total
1982	7.0	11.6	3.0	9.9	110.8	3.5	145.9	3.5	41.8	120.8	89.9	209.3	4.1	58.8	1.6	13.4	545.5
1983	5.0	6.3	1.2	4.1	54.3	2.1	73.0	5.1	36.1	75.1	53.7	135.0	3.6	36.4	1.4	10.1	358.5
1984	7.2	9.4	1.6	3.6	78.6	3.1	103.4	4.6	24.7	103.7	34.1	183.6	2.8	61.7	1.6	11.6	431.1
1985	3.9	7.4	1.7	1.4	95.5	2.6	112.5	4.8	25.9	130.4	26.4	212.0	4.2	64.5	1.6	13.1	485.0
1986	4.2	6.5	1.3	4.3	80.0	1.6	97.9	3.6	29.9	98.1	70.2	198.4	4.5	49.5	1.7	14.0	472.2
1987	3.8	5.1	1.2	5.3	74.1	3.0	92.6	3.6	25.5	98.4	66.7	189.1	3.4	48.6	1.7	10.3	449.7
1988	4.3	5.6	.8	2.1	31.2	.8	44.8	3.6	24.7	49.5	18.0	70.5	4.9	15.6	1.2	16.1	205.5
1989	7.6	8.7	1.0	6.0	66.0	2.9	92.2	4.9	34.7	96.9	85.0	174.0	4.9	45.1	1.0	41.7	489.7
1990	4.1	5.6	1.3	4.5	103.7	3.2	122.4	2.8	30.6	134.8	53.9	277.2	3.1	67.2	1.2	11.5	583.1
1991[1]	3.7	3.4	1.0	5.9	88.4	1.7	104.0	2.7	32.7	64.2	81.6	212.4	2.3	49.0	1.1	58.0	504.6

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.735

Wheat Under Price Support Through the End of the Month (Cumulative Total from Current Season's Crop) In Millions of Bushels

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1982–3	106.7	206.5	335.2	414.0	467.2	501.1	579.1	606.1	629.4	638.6	640.9	643.4	
1983–4	196.3	335.2	357.5	462.8	494.7	520.4	571.5	595.4	619.2	627.5	629.1	630.3	
1984–5	48.8	104.9	195.5	213.4	225.6	237.7	263.5	270.2	275.7	279.7	280.1	280.8	
1985–6	269.5	414.2	567.7	679.0	714.3	740.7	786.2	803.8	813.5	825.0	827.3	828.1	
1986–7	81.7	155.7	274.6	400.5	441.6	456.0	487.9	500.7	505.6	512.6	513.5	513.4	513.4
1987–8	—	105.1	259.6	350.4	396.7	418.2	442.8	460.2	466.5	470.7	472.0	472.1	472.2
1988–9	—	60.0	85.9	91.3	94.1	99.3	103.6	104.7	105.7	106.2	106.3	106.3	106.3
1989–90	—	42.7	69.7	82.1	89.7	97.6	104.6	107.5	111.7	113.3	113.4	113.4	113.4
1990–1	36.7	113.0	219.8	254.7	277.1	293.4		401.6	404.5	405.1	405.1	405.1	
1991–2	405.1												

Source: Economic Research Service, U.S.D.A. T.729

United States Grindings of Wheat by Mills In Millions of Bushels (of 60 Pounds Each)

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1982–3	53.4	57.0	55.4	57.5	54.9	55.9	55.7	53.6	60.1	54.8	59.1	57.7	675.1
1983–4	56.2	66.1	62.9	59.4	57.2	56.0	55.7	57.5	58.4	54.0	60.1	54.6	698.1
1984–5	51.8	59.2	55.2	58.7	56.6	53.4	56.7	57.4	58.8	55.3	58.1	53.9	675.1
1985–6	54.6	60.9	59.5	65.1	63.7	56.0	60.0	59.2	54.6	57.0	58.6	57.6	706.8
1986–7	60.0	65.4	65.9	69.2	65.8	64.1	59.3	60.2	62.7	62.8	66.1	64.2	765.7
1987–8	62.3	66.3	65.8	69.5	66.7	62.5	59.6	58.4	61.2	58.0	65.7	63.8	759.8
1988–9	63.6	70.0	66.0	70.0	69.7	63.8	65.0	60.8	60.4	60.7	64.7	59.6	773.3
1989–90	58.5	70.6	63.6	67.4	65.1	58.7	63.4	64.0	66.7	61.6	63.6	60.6	763.8
1990–1	62.3	73.2	65.7	74.9	73.9	64.3	67.3	65.7	61.6	67.7	69.9	59.5	797.6
1991–2[1]	63.8												

[1] Preliminary. *Source: Bureau of the Census*

T.744

Comparative Average Cash Wheat Prices In Dollars per Bushel

					Minneapolis					Export Prices[2] (U.S. $ per Metric Ton)				
Crop Year— June to May	Received by U.S. Farmers	No. 2 Soft Red Winter Chicago	No. 1 Hd. Red Ordin. Protein Kansas City	No. 2 Soft Red Winter St. Louis	No. 1 Dark Northern Spring 14%	No. 1 Hard Amber Durum	No. 1 Soft Portland Oregon	No. 2 Western White Pacific N.W.	No. 2 Soft White Toledo	Australia Std. White	Canada Vanc. No. 1 CWRS 13½%	Argentina F.O.B. B.A.	U.S. Gulf No. 2 H.W.	Rotterdam C.I.F. U.S. No. 2 Hd. Winter
1982–3	3.45	3.32	3.94	3.32	4.09	4.25	4.39	3.93	3.33	160	165	166	161	187
1983–4	3.51	3.56	3.84	3.62	4.30	4.83	3.95	3.58	3.48	161	169	138	158	185
1984–5	3.39	3.51	3.74	3.57	4.08	4.45	3.82	3.44	3.42	153	166	135	153	180
1985–6	3.08	3.22	3.28	3.26	3.94	4.07	3.72	3.34	3.12	141	173	106	137	169
1986–7	2.42	2.76	2.72	2.87	3.07	3.57	2.90	2.59	2.66	120	161	88	117	148
1987–8	2.57	2.89	2.96	2.95	3.15	4.13	3.06	2.74	2.94	115	134	89	114	141
1988–9	3.72	4.00	4.17	4.08	4.36	5.53	4.53	4.13	3.90	150	177	125	146	176
1989–90	3.72	3.92	4.22	3.94	4.16	4.25	4.28	3.88	3.80	176	202	151	171	190
1990–1[1]	2.61	2.73	2.94	2.81	3.06	3.48	3.16	2.75	2.60	145	158	107	137	164
1991–2[1]	2.85									N.Q.	134	106	147	171

[1] Preliminary. [2] Calendar year. *Source: Economic Research Service, U.S.D.A.*

T.733

Wheat Government Loan Program Data in the United States Loan Rates (Cents Per Bushel)

												Stocks Ending May 31				
														Outstanding		
Crop Year Beginning June	Total Support Rate	National Avg.[1]	Target Rate	Corn Belt (Soft Red Winter)	Central & So. Plains (Hard Winter)	No. Plains (Spr. & Dur.)	Pacific North-West (White)	Placed Under Loan	% of Production	Acquired By CCC Under Program	Delivered To CCC	Total Stocks	Total CCC Stocks	CCC Loans	Farmer-Owned Reserve	"Free"
								Millions of Bushels								
1982–3	405	355	405	356	347	357	365	646	23.0	148	9.3	1,515	192.0	65.2	1,060.6	197.3
1983–4	430	365	430	366	356	368	375	635	26.2	220	192.0	1,399	188.0	379.1	611.2	220.3
1984–5	438	330	438	328	323	334	343	285	10.9	244		1,425	377.6	175.0	657.1	215.5
1985–6	438	330	438	328	323	334	343	842	34.7	288		1,905	601.7	677.7	596.4	29.2
1986–7	438	240	438	236	235	244	250	514	24.5	473		1,821	830.1	235.6	631.8	123.4
1987–8	438	228	438	235	282	228	239	472	22.4	147		1,261	283.0	177.5	466.8	333.5
1988–9	423	221	423	233	221	221	232	106	5.9	45		701.6	190.5	19.2	287.0	204.9
1989–90	410	206	410	214	204	206	217					536.5	116.6	30.0	143.9	246.0
1990–1[2]	400	195	400	209	200	204	214					865.7	162.7	216.8	13.7	472.5
1991–2[3]	400	204	400									514	150			

[1] The national average loan rate at the farm as a percentage of the parity-priced wheat at the beginning of the marketing year. [2] Preliminary. [3] Estimate. *Source: Agricultural Marketing Service, U.S.D.A.*

T.741

Exports of Wheat (Only) from the United States In Millions of Bushels

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
1984–5	105.4	133.3	146.2	242.7	137.3	97.3	131.9	106.4	85.5	58.0	67.8	56.6	1,368.4
1985–6	84.3	63.9	86.9	72.2	85.7	82.4	61.9	70.1	70.9	66.2	56.4	46.2	846.9
1986–7	79.5	104.7	114.9	98.2	84.8	59.2	53.8	65.0	67.8	65.5	65.4	64.6	923.4
1987–8	119.8	157.7	112.8	119.9	101.7	71.2	113.6	140.2	144.0	149.1	152.8	147.7	1,530.5
1988–9	121.8	111.5	107.6	127.6	93.2	93.3	100.1	115.8	127.2	141.8	115.9	91.6	1,347.4
1989–90	90.8	138.0	132.0	150.7	89.3	68.7	81.8	78.3	87.7	104.9	84.6	71.6	1,178.5
1990–1	88.3	80.8	92.7	106.0	83.9	77.3	56.4	66.5	91.3	112.2	88.5	81.8	1,025.7
1991–2[1]	56.2	79.4	97.4	95.1									

[1] Preliminary. *Source: Department of Commerce*

T.738

WHEAT

United States Wheat and Wheat Flour Imports and Exports In Thousands of Bushels

	Imports					Exports						
	Wheat					Public Law 480						
Year Beginning June	Suitable for Milling	Unfit for Human Consumption	Flour (Wheat Equivalent)	Other Pdt's[2]	Total	Sales for Foreign Currency[3]	Long-Term $ & Conver. for Cur. Credit Sales	Gov't. to Gov't. Donations[4]	Donations Thru Voluntary Relief Agencies	Foreign Donations Sec. 416	Mutual Security (A.I.D.)[5]	Total Specified Gov't. Programs
1981–2	59	14	357	2,423	2,853	—	110,046	14,312	8,614	—	—	132,972
1982–3	3,901	35	624	3,036	7,596	—	113,322	22,081	8,724	—	6,805	150,932
1983–4	67	10	336	3,425	3,839	—	120,670	19,114	17,117	—	—	156,901
1984–5	4,825	3	329	4,285	9,442	—	151,605	23,188	8,930	—	2,726	186,449
1985–6	11,340	71	475	4,405	16,292	—	134,159	18,865	7,101	1,849	17,124	179,098
1986–7	14,833	979	411	4,917	21,140	3,953	150,840	9,597	5,831	15,413	28	185,662
1987–8	9,020	969	755	5,342	16,087	3,181	111,996	14,804	16,119	44,173	10,713	200,986
1988–9[1]	15,870	N.A.	539	6,259	22,649	4,103	95,913	18,384	13,518	5,044	30,378	167,340
1989–90[1]	13,548	N.A.	533	9,366	23,447							

[1] Preliminary. [2] Includes macaroni, semolina & similar pdt's. [3] Authorized by title, I, P.L. 480. [4] Author. by title II, P.L. 480. [5] Foreign Assist. Act of 1961. *Source: Economic Research Service, U.S.D.A.* T.732

Wheat Stocks in the United States In Millions of Bushels

	On Farms				Off Farms				Total Stocks			
Year	Mar. 1	June 1	Sept. 1	Dec. 1	Mar. 1	June 1	Sept. 1	Dec. 1	Mar. 1	June 1	Sept. 1	Dec. 1
1985	N.A.	582.1	N.A.	N.A.	N.A.	843.2	N.A.	N.A.	1,800.8	1,425.2	3,203.5	2,643.4
1986	N.A.	681.1	1,293.0	1,063.0	N.A.	1,223.9	1,861.6	1,610.5	2,255.8	1,905.0	3,154.6	2,673.5
1987	794.0	560.0	1,168.0	971.0	1,456.4	1,260.9	1,820.5	1,534.3	2,250.4	1,820.9	2,988.5	2,505.3
1988	748.0	525.0	798.0	620.0	1,175.5	735.8	1,455.6	1,095.9	1,923.5	1,260.8	2,253.6	1,715.9
1989[1]	463.0	289.0	832.0	592.0	764.7	412.6	1,086.0	830.5	1,227.7	701.6	1,918.0	1,422.5
1990[1]	376.0	212.5	1,000.0	763.2	567.1	324.0	1,409.5	1,144.8	943.1	536.5	2,409.5	1,909.5
1991	532.9	341.2	828.0	564.8	863.3	524.7	1,212.7	877.3	1,396.3	865.9	2,040.7	1,442.1

[1] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.731

Commercial Stocks of Domestic Wheat[1] in the United States, at First of Month In Millions of Bushels

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1983–4	285.0	403.1	462.1	477.0	442.0	385.4	334.9	294.9	273.0	255.1	236.6	212.4
1984–5	265.2	423.0	413.7	409.4	387.8	352.8	309.9	268.0	248.5	239.8	215.1	221.4
1985–6	312.5	434.8	474.8	510.9	504.2	473.9	446.3	435.7	413.0	400.3	399.0	407.2
1986–7	437.5	483.7	494.7	475.9	472.7	445.0	435.0	420.0	410.1	393.3	381.1	366.8
1987–8	417.8	436.5	443.7	451.9	439.9	421.4	387.1	361.1	302.6	261.2	235.6	203.7
1988–9	291.6	334.2	342.4	340.8	331.1	297.2	293.7	266.5	213.3	181.1	150.1	114.4
1989–90	130.5	171.6	211.7	211.8	196.0	180.2	164.2	150.4	127.9	109.7	87.2	77.8
1990–1	121.8	212.7	289.7	290.2	284.6	264.8	243.7	237.7				

[1] Domestic wheat in store in public and private elevators in 39 markets and wheat afloat in vessels or barges at lake and seaboard ports, the first Saturday of the month. *Source: Department of Agriculture* T.746

Average of All Wheat Futures Contracts at Chicago,[1] K.C. & Mpls. In Thousands of Bushels

	Chicago[1]												Kansas City[2]
Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
1984	304,018	295,283	283,019	289,316	257,349	238,402	229,909	256,761	215,190	207,634	227,782	211,438	89,401
1985	206,892	191,587	173,737	190,077	194,039	197,308	186,000	196,731	170,237	169,586	149,812	152,746	95,317
1986	165,634	160,985	162,241	176,466	178,596	187,200	177,405	173,918	173,247	183,853	152,193	125,838	71,056
1987	128,805	137,113	147,187	154,030	160,892	175,160	176,293	200,085	199,244	194,362	163,349	152,801	66,850
1988	192,824	209,322	206,533	217,011	209,546	283,122	283,710	280,121	342,077	372,677	348,955	313,480	112,972
1989	334,519	315,770	323,343	308,643	301,955	349,492	335,590	327,315	307,555	261,229	260,113	270,586	156,530
1990	271,124	281,973	284,920	257,741	283,120	319,096	322,882	298,960	286,186	291,155	279,248	235,303	142,888
1991	242,983	257,602	279,608	268,339	265,149	294,983	274,730	261,417	276,101	306,286	288,394	259,224	128,872
1992													

[1] Chicago Board of Trade. [2] Kansas City Board of Trade. *Source: Commodity Futures Trading Commission* T.748

Wheat Supply and Distribution in Canada, Australia and Argentina In Millions of Metric Tons

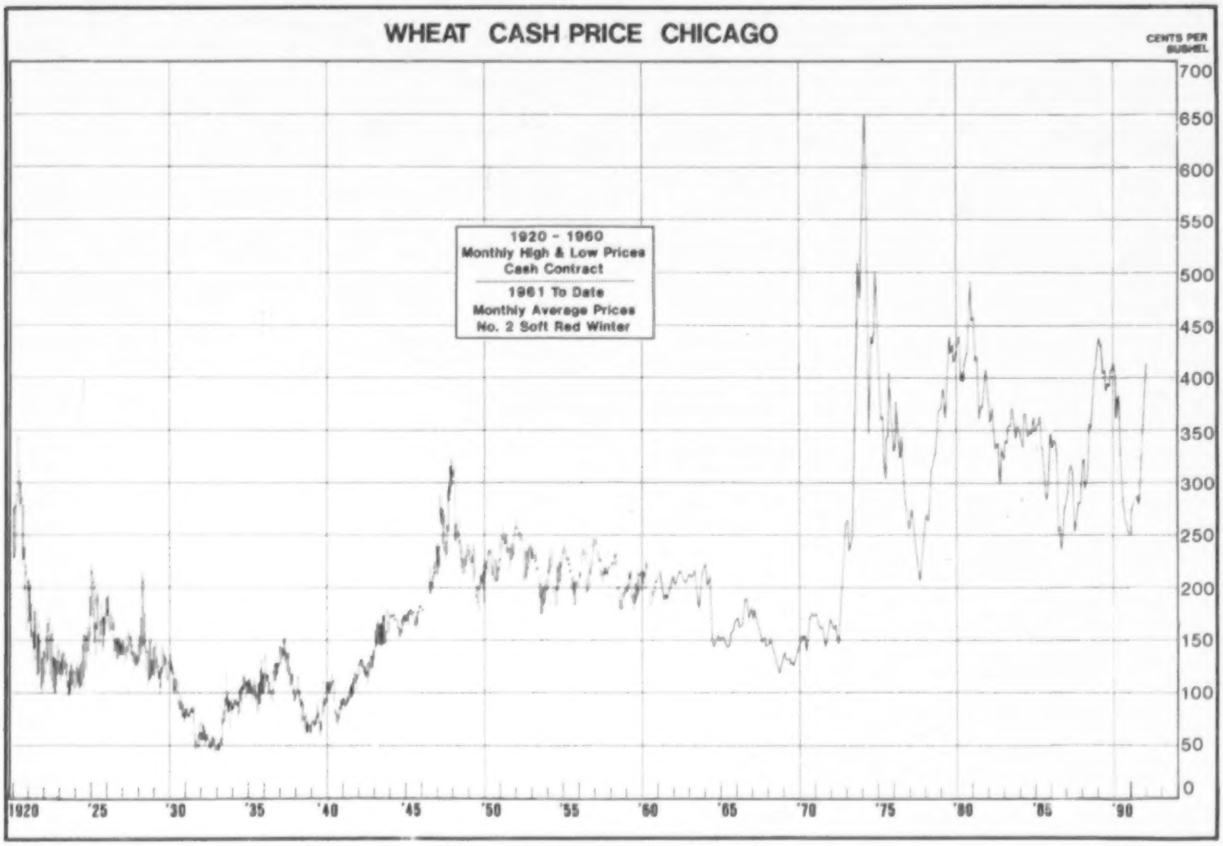
Crop Year	Canada (Yr. Beg. Aug. 1)					Australia (Yr. Beg. Oct. 1)					Argentina (Yr. Beg. Dec. 1)				
	Supply			Disappearance		Supply			Disappearance		Supply			Disappearance	
	Stocks Aug. 1	New Crop	Total Supply	Domestic	Exports[1]	Stocks Oct. 1	New Crop	Total Supply	Domestic	Exports[1]	Stocks Dec. 1	New Crop	Total Supply	Domestic	Exports[1]
1981–2	8.6	24.8	33.4	5.2	18.4	2.0	16.4	18.4	2.6	11.0	.4	8.3	8.7	4.3	3.6
1982–3	9.7	26.7	36.4	5.1	21.4	4.8	8.9	13.7	4.1	7.3	.8	15.0	15.8	4.8	9.9
1983–4	10.0	26.5	36.5	5.5	21.8	2.3	22.0	24.3	3.4	13.3	1.1	12.8	13.9	4.7	7.8
1984–5	9.2	21.2	30.2	5.2	17.5	7.5	18.7	26.2	2.9	15.8	1.3	13.2	14.5	4.6	9.4
1985–6	7.6	24.3	31.9	5.6	17.7	8.6	16.2	24.8	2.9	16.0	.5	8.5	9.0	4.4	4.3
1986–7	8.6	31.4	40.0	6.4	20.8	5.9	16.1	22.0	2.6	14.8	.3	8.9	9.2	4.5	4.4
1987–8	12.7	26.0	38.7	7.9	23.5	3.8	12.4	16.2	3.5	9.9	.2	8.8	9.0	4.5	3.7
1988–9	7.3	16.0	23.3	5.8	12.4	2.8	14.1	16.9	2.8	10.8	.8	8.4	9.2	4.7	4.0
1989–90	5.0	24.6	29.6	5.8	17.4	2.6	14.2	16.6	3.1	10.8	.5	10.2	10.7	4.5	6.1
1990–1[2]	6.5	32.7	39.2	6.7	22.1	2.9	15.1	18.0	4.0	11.8	.1	10.5	10.6	4.8	5.3
1991–2[3]	14.6	33.0	47.6	7.1	24.5	4.1	10.0	14.1	3.5	7.1	.5	9.0	9.5	4.6	4.7

[1] Including flour. [2] Preliminary. [3] Forecast. *Source: Foreign Agricultural Service, U.S.D.A.* T.725

United States Wheat Quarterly Supply and Disappearance In Millions of Bushels

Year & Begin. June 1	Supply				Disappearance							Ending Stocks		
					Domestic Use									
	Beginning Stocks	Production	Imports[2]	Total Supply	Food	Alc. Beverages	Seed	Feed & Residual	Total	Exports[2]	Total Disappearance	Gov't. Owned[4]	Privately Owned[5]	Total Stocks
1984–5	1,399	2,595	9.4	4,003	651.0	—	98.0	407.1	1,156	1,421	2,578	377.6	1,048	1,425
June–Aug.	1,399	2,595	3.8	3,997	157.8	—	1.0	279.6	438.4	398.7	837.1	278.1	2,882	3,160
Sep.–Nov.	3,160	—	2.2	3,162	168.5	—	69.0	101.5	339.0	484.8	823.8	359.4	1,979	2,339
Dec.–Feb.	2,339	—	1.1	2,340	164.2	—	4.0	35.5	203.7	335.1	538.8	375.7	1,415	1,801
Mar.-May	1,801	—	2.3	1,803	160.5	—	24.0	–9.5	175.0	202.9	377.9	377.6	1,048	1,425
1985–6	1,425	2,424	16.3	3,866	674.3	—	93.0	284.2	1,052	909.1	1,961	601.7	1,303	1,905
June–Aug.	1,425	2,424	5.1	3,855	165.8	—	1.0	235.9	402.8	249.1	651.9	406.7	2,797	3,204
Sep.–Nov.	3,204	—	5.1	3,209	185.6	—	63.0	63.7	312.3	252.9	565.2	517.1	2,126	2,643
Dec.–Feb.	2,643	—	2.7	2,646	162.2	—	4.0	– .2	165.9	224.4	390.3	526.3	1,730	2,256
Mar.–May	2,256	—	3.5	2,259	160.8	—	25.0	–20.5	165.3	189.0	354.3	601.7	1,303	1,905
1986–7	1,905	2,091	21.3	4,017	712.2	—	84.0	401.2	1,197	998.5	2,196	830.1	990.8	1,821
June–Aug.	1,905	2,091	4.3	4,001	169.0	—	1.0	353.8	523.8	320.6	844.4	793.8	2,363	3,157
Sep.–Nov.	3,157	—	3.6	3,160	185.9	—	57.0	–19.6	223.3	263.4	486.7	863.9	1,810	2,674
Dec.–Feb.	2,674	—	5.9	2,679	168.0	—	3.0	55.3	226.3	202.7	429.0	905.3	1,345	2,250
Mar.–May	2,250	—	7.3	2,258	174.7	—	23.0	22.3	220.0	216.8	436.8	830.1	990.8	1,821
1987–8	1,821	2,108	16.1	3,945	720.7	—	85.0	280.3	1,086	1,598	2,684	283.0	977.8	1,261
June–Aug.	1,821	2,108	2.7	3,931	181.1	—	1.0	362.7	544.7	409.9	954.6	798.8	2,190	2,977
Sep.–Nov.	2,977	—	4.5	2,981	193.1	—	58.0	–79.2	171.9	308.5	480.4	755.4	1,751	2,501
Dec.–Feb.	2,501	—	3.7	2,504	170.8	—	3.0	– 6.2	167.6	413.1	580.8	450.1	1,473	1,924
Mar.–May	1,924	—	5.1	1,929	181.6	—	23.0	2.7	207.3	460.6	667.8	283.0	977.8	1,261
1988–9	1,261	1,812	22.6	3,096	714.5	—	103.0	157.4	974.9	1,419	2,394	190.5	511.1	701.6
June–Aug.	1,261	1,812	8.6	3,082	183.3	—	1.0	282.2	466.4	361.6	828.1	250.0	2,004	2,254
Sep.–Nov.	2,254	—	6.3	2,260	197.3	—	67.0	–49.4	214.9	329.0	543.9	213.0	1,503	1,716
Dec.–Feb.	1,716	—	3.7	1,720	168.9	—	3.0	–40.6	131.3	360.5	491.9	203.2	1,025	1,228
Mar.–May	1,228	—	4.1	1,232	165.0	—	32.0	–34.8	162.2	368.0	530.2	190.5	511.1	701.6
1989–90	701.6	2,037	23.4	2,762	731.0	—	101.1	160.1	992.2	1,233	2,225	117.0	419.5	536.5
June–Aug.	701.6	2,037	5.9	2,744	190.7	—	1.7	263.8	456.2	369.9	826.1	167.9	1,750	1,918
Sep.–Nov.	1,918	—	7.1	1,925	191.6	—	68.4	–85.9	174.1	328.6	502.7	154.5	1,268	1,423
Dec.–Feb.	1,423	—	4.7	1,427	185.7	—	2.8	35.9	224.4	259.7	484.0	136.5	806.6	943.1
Mar.–May	943.1	—	5.8	949	185.0	—	27.5	–75.3	137.2	275.2	412.4	116.6	419.9	536.5
1990–1[1]	536.5	2,744	23.4	3,303	745.0	—	88.0	450.0	1,283	1,075	2,358	147.0	798.0	945.0
June–Aug.	536.5	2,744	8.0	3,281	196.4	—	1.6	405.3	603.3	268.1	871.4	104.6	2,305	2,410
Sep.–Nov.	2,409.5	—	13.4	2,423	211.2	—	60.5	– 34.8	236.9	278.0	514.9	129.9	1,778	1,908
Dec.–Feb.	1,908.0	—	7.8	1,916	192.7	—	2.0	99.6	294.3	225.5	519.8	152.5	1,244	1,396
Mar.–May	1,396.0	—	7.2	1,403	195.6	—	26.2	19.3	241.1	296.3	537.5	162.7	703	866
June–Aug. '91[3]	865.7	1,981	7.8	2,854	177.4	—	97.2	350.0	560.1	252.7	813.2	162.8	1,878	2,041

[1] Preliminary. [2] Imports & exports include flour and other products expressed in wheat equivalent. [3] Forecast. [4] Uncommitted, Gov't. only. [5] Includes total loans. [6] Less than 50,000 bushels. *Source: Economics Research Service, U.S.D.A.* T.740



Average Price of No. 2 Soft Red Winter (30 Days) Wheat at Chicago In Dollars per Bushel

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
1979–0	4.36	4.39	4.23	4.28	4.30	4.13	4.26	4.36	4.39	4.18	3.96	4.04	4.24
1980–1	3.96	4.17	4.21	4.38	4.70	4.92	4.54	4.57	4.34	4.15	4.18	3.80	4.33
1981–2	3.60	3.70	3.70	3.87	3.97	4.08	3.86	3.77	3.57	3.59	3.70	3.43	3.74
1982–3	3.31	3.36	3.35	3.18	2.98	3.33	3.23	3.32	3.40	3.36	3.51	3.55	3.32
1983–4	3.53	3.59	3.71	3.62	3.56	3.42	3.55	3.47	3.34	3.57	3.65	3.65	3.56
1984–5	3.51	3.44	3.49	3.47	3.51	3.62	3.49	3.51	3.55	3.58	3.63	3.34	3.51
1985–6	3.27	3.09	2.87	2.83	3.04	3.33	3.46	3.34	3.37	3.40	3.39	3.25	3.22
1986–7	2.52	2.58	2.44	2.36	2.57	2.73	2.76	2.87	2.91	3.11	3.16	3.08	2.76
1987–8	2.63	2.54	2.61	2.77	2.82	2.80	3.00	3.23	3.23	2.94	3.02	3.13	2.89
1988–9	3.56	3.52	3.61	3.84	4.07	4.09	4.25	4.39	4.30	4.31	4.04	4.07	4.00
1989–90	3.87	3.92	3.94	3.93	4.07	4.07	4.13	4.03	3.92	3.61	3.83	3.71	3.92
1990–1	3.26	3.04	2.83	2.62	2.62	2.41	2.52	2.50	2.53	2.76	2.80	2.83	2.73
1991–2	2.86	2.79	2.97	3.24	3.50	3.57	3.79	4.12					

Source: Agricultural Marketing Service, Grain Division, U.S.D.A. T.745

Stocks of Wheat Flour Held by Mills in the United States In Thousands of Sacks (100 Pounds)

Year	Jan. 1	April 1	July 1	Oct. 1	Year	Jan. 1	April 1	July 1	Oct. 1
1982	3,460	3,384	3,744	3,563	1987	5,228	4,900	5,581	5,258
1983	4,276	3,760	3,490	3,599	1988	5,858	4,508	4,822	5,303
1984	3,805	3,780	3,763	3,833	1989	4,800	4,423	5,116	5,489
1985	4,230	4,363	5,040	5,052	1990[1]	5,207	5,072	7,695	7,980
1986	4,847	4,740	5,141	5,101	1991[1]	8,051	7,639	8,429	6,234

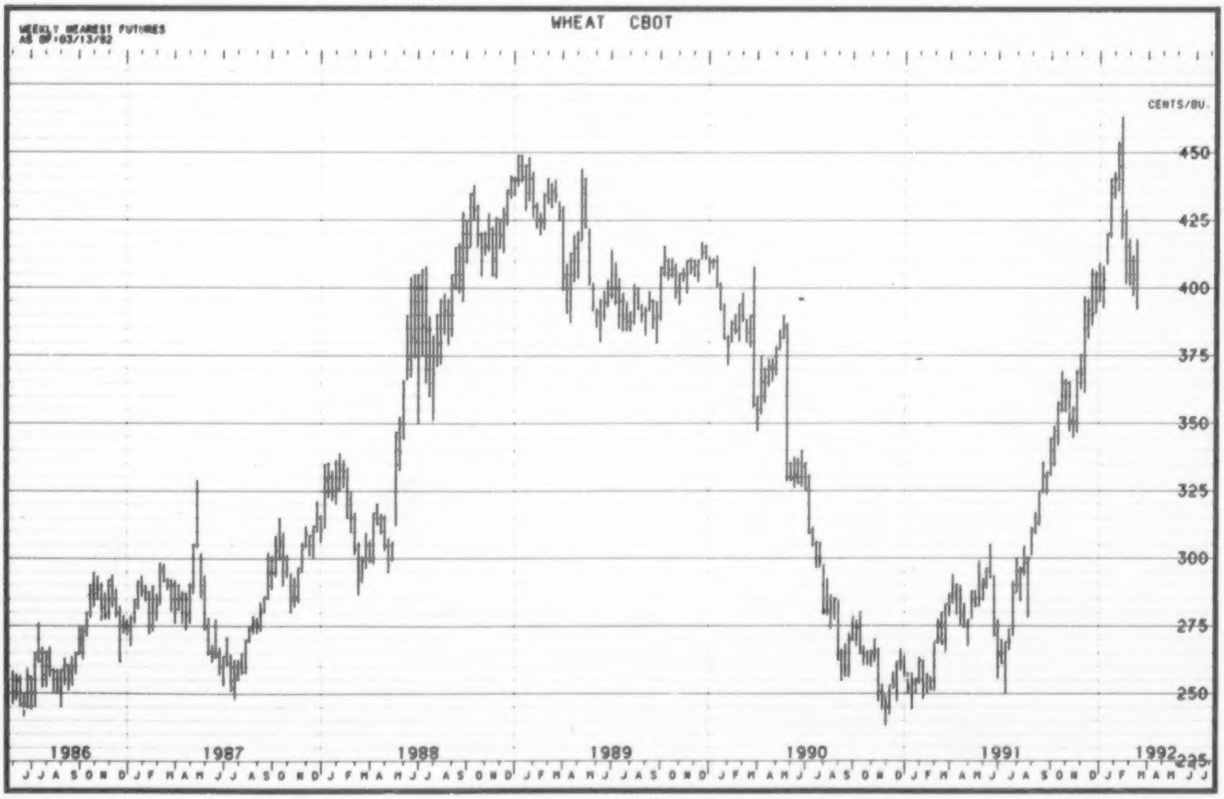
[1] Preliminary. *Source: Department of Commerce* T.755

High, Low & Closing Prices of May Wheat Futures on the Chicago Board of Trade In Cents per Bushel

Year of Delivery		Year Prior to Delivery									Delivery Year					Life of Delivery
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	Range
1985	High	383½	405	392½	387	388	363	363½	362½	349¼	347¾	350	361¼	371½	349½	405
	Low	372	367¼	373½	369	355¼	350	351¼	347¼	334½	332½	333¾	335½	345	319¾	319¾
	Close	372	390½	385½	381½	357	353¾	361	349	341	343½	336¼	356½	349	320¾	—
1986	High	350	338¼	328¾	316	305	303	315	319½	326½	320½	294	312	328	360	360
	Low	335	316	314	286½	284	286½	294½	305¼	308½	281	274	285¼	275½	300	274
	Close	338¼	316	314	291¾	291½	300	311½	311¼	321	288¼	286¼	304¼	328	358	—
1987	High	283	300	255¼	250	253	250½	261½	267	269½	274	282	292½	290½	329	329
	Low	244	248	239	233¼	241½	237	244	252½	258	254½	263	278	273½	287¼	233¼
	Close	283	249	239	245¼	246½	244¼	255½	267	260¾	271¼	280	284½	289	295½	—
1988	High	276½	315	288½	282	296¾	302	318	317	319¼	334½	339	324¼	320½	341½	341½
	Low	264½	276	268	263	276½	280½	293	293	304¼	308	318	295½	298	294¾	263
	Close	275	281	268	278	282½	290	304	316¼	307½	327	323½	299¼	304½	336	—
1989	High	349	370	408	420	394	413½	416	417	430½	440	436	445	421	444	445
	Low	335½	330	365	348	367	390½	396	397	398	418	417½	399	387	401	330
	Close	338½	370	398	363	391	394	403	412½	426	435	434¾	403¾	417½	403¼	—
1990	High	423	431	414	412	408½	393½	391	395¾	393½	390	369½	363	374¾	340	431½
	Low	403½	400	398	381	384½	370	376	379	380½	361	359½	347	353¼	367½	347
	Close	442½	403¾	405	392¼	390½	379	379¾	390	387¾	362¾	362¼	351¾	374¼	383½	—
1991	High	362½	373	361	356	320	304¼	300½	292¾	276	272	272½	289	294	288	373
	Low	352	345	347½	314	295½	291	281¼	264½	266	254¼	258½	269½	267½	270	254¼
	Close	357½	354	348½	314½	295½	299	285¼	269½	266½	271¼	269½	286¾	272¾	286½	—
1992	High	336	325	316	315	324	332¾	352½	358	381½						
	Low	314	309½	291	280½	290	317½	330	330¾	344						
	Close	317	311	298½	311½	315½	330	343½	349	381						

Source: Chicago Board of Trade

T.750



WHEAT

Average Price of No. 1 Hard Red Winter (Ordinary Protein) Wheat, at Kansas City In Cents per Bushel

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
1984–5	380	367	380	389	386	385	376	376	374	367	362	342	374
1985–6	338	317	303	307	315	335	342	332	330	336	345	340	328
1986–7	280	250	248	253	260	268	268	270	280	290	290	302	272
1987–8	270	259	265	278	290	290	310	320	328	310	314	320	296
1988–9	379	377	378	403	413	418	425	440	437	432	446	455	417
1989–90	444	428	424	418	428	436	439	430	413	404	413	391	422
1990–1	360	311	289	282	281	278	278	271	277	294	298	304	294
1991–2	299	291	310	331	364								

Source: Agricultural Marketing Service, U.S.D.A. T.739

Average Price of No. 1 Dark Northern Spring Wheat at Minneapolis (14% Protein) In Cents per Bushel

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
1984–5	445	434	407	397	403	402	392	390	392	394	436	402	406
1985–6	399	377	356	376	391	409	416	397	390	400	417	403	394
1986–7	317	300	286	285	298	309	304	308	313	319	317	324	307
1987–8	307	294	294	304	315	311	313	324	332	315	330	342	315
1988–9	432	423	424	432	433	422	426	444	440	456	447	455	436
1989–90	441	436	418	408	411	412	423	421	406	396	408	409	416
1990–1	396	356	305	284	285	280	282	283	285	300	307	310	306
1991–2	304	294	310	321	368								

Source: Agricultural Marketing Service, U.S.D.A. T.742

Average Price[1] Received by Farmers for Wheat in the U.S. In Cents per Bushel

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average[2]
1984–5	346	329	343	343	343	345	338	338	338	338	333	330	339
1985–6	309	293	289	301	310	322	325	319	316	328	337	301	308
1986–7	247	225	226	228	230	243	249	253	258	257	263	266	242
1987–8	244	232	236	253	262	269	270	275	279	274	279	297	257
1988–9	337	350	361	374	384	388	394	402	403	407	403	401	372
1989–90	385	378	374	372	375	372	379	371	356	348	349	340	372
1990–1	308	279	258	246	243	239	240	242	243	253	260	264	255
1991–2	255	249	263	280	308								

[1] Weighted average by sales. [2] Includes an allowance for unredeemed loans at average loan values.
Source: Statistical Reporting Service, U.S.D.A. T.743

Average Producer Price Index of Wheat Flour (Spring[1]) June 1983 = 100

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1984–5	99.5	96.9	96.9	97.3	97.7	96.8	98.2	98.7	98.3	100.3	97.0	96.3	97.8
1985–6	95.2	93.1	93.7	94.9	96.6	96.7	96.2	96.4	96.4	94.8	99.7	92.8	95.5
1986–7	87.9	87.0	85.4	86.9	86.8	86.9	87.0	89.1	89.2	89.8	93.5	90.1	88.3
1987–8	88.4	88.0	90.1	91.3	90.1	90.0	91.2	94.4	90.6	93.5	93.9	107.0	92.4
1988–9	107.0	107.7	110.0	110.5	109.0	109.1	110.7	110.0	112.4	109.5	112.0	112.7	110.5
1989–90	112.1	110.7	109.5	108.5	108.7	109.6	109.4	109.0	106.9	108.8	107.9	106.0	100.2
1990–1	99.7	93.4	92.0	91.2	89.4	89.8	88.7	90.2	92.0	93.0	94.0	93.0	92.2
1991–2	90.8	94.0	95.8										

[1] Standard patent. *Source: Bureau of Labor Statistics* (0212–0301.99) T.758

World Wheat Flour Production In Thousands of Metric Tons

Year	Argentina	Australia[2]	Rep. of Korea	France	India[3]	Mexico	Israel	Japan	W. Germany	Egypt	Poland	South Africa	Turkey	Un. Kingdom	United States	Yugoslavia
1983	2,678	1,055	1,476	4,386	3,092	2,435	506	4,356	2,280	3,686	2,539	694	1,582	3,420	13,883	2,414
1984	2,851	1,138	1,547	4,632	3,335	2,446	516	4,439	3,500	3,707	2,645	727	1,481	3,604	13,600	2,350
1985	2,899	1,159	1,612	4,284	3,430	2,366	508	4,402	3,523	3,598	2,645	564	1,490	3,648	14,234	2,411
1986	2,856	1,178	1,596	4,922	3,720	2,126	529	4,534	3,415	3,731	2,498	520	1,518	3,700	14,801	2,323
1987	2,470	1,217	1,613	5,021	3,526	2,256	529	4,496	3,449	3,704	2,723	577	1,596	3,829	15,354	2,282
1988[1]	N.A.	1,280	1,692	5,203	4,360	2,400	528	4,465	3,611	N.A.	2,836	650	1,334	3,956	15,601	2,206
1989[3]		1,360	1,614	5,227	4,696	2,504	524	4,541	3,576			888	1,637	3,919	15,849	2,484

[1] Preliminary. [2] Twelve months ending June 30 of the year stated. [3] Estimate. *Source: United Nations* T.752

United States Wheat Flour Production In Millions of Sacks (100 Pounds Each)

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1984–5	22.8	26.0	24.4	26.3	25.3	23.8	25.6	25.6	26.4	24.7	26.2	24.1	301.2
1985–6	24.3	27.3	26.8	29.1	28.4	25.2	26.6	26.3	24.5	25.3	26.0	25.5	268.4
1986–7	26.4	28.9	29.1	30.4	28.9	28.2	26.3	26.6	28.0	26.9	29.2	28.7	241.0
1987–8	27.6	30.1	29.3	31.3	29.8	28.0	26.5	26.5	27.1	26.0	29.2	28.6	340.0
1988–9	28.5	31.4	29.4	31.3	31.1	28.5	29.1	27.1	27.0	27.2	28.6	26.6	345.8
1989–90	26.6	32.3	29.8	31.8	30.0	27.8	27.9	28.0	29.2	27.0	27.6	26.7	342.8
1990–91	27.7	33.7	29.9	33.7	33.6	29.1	30.0	29.6	27.9	30.5	31.2	26.4	359.6
1991–2[1]	28.4												

[1] Preliminary. *Source: Bureau of the Census* T.754

United States Wheat Flour Exports (grain equivalent[2]) In Thousands of Bushels

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
1984/85	6,614	4,105	1,166	1,596	3,242	633	941	392	6,297	5,148	6,335	4,020	40,489
1985/86	3,640	2,638	1,638	1,038	1,289	2,902	6,680	3,174	5,521	5,157	6,411	2,381	42,469
1986/87	5,104	4,795	6,675	4,731	5,999	2,332	6,664	6,681	3,676	6,173	6,722	6,365	65,918
1987/88	5,450	6,816	4,749	3,999	3,418	6,746	4,316	6,934	2,556	10,776	2,463	2,520	60,743
1988/89	7,036	6,400	6,002	2,402	7,908	3,368	6,086	4,178	6,515	6,841	6,540	5,214	68,490
1989/90	907	1,897	5,775	8,915	3,579	6,817	3,606	4,943	3,124	4,466	6,132	3,289	53,450
1990/91	1,139	2,244	2,785	2,865	3,390	3,508	4,480	2,698	3,809	6,301	3,719	3,525	40,464
1991–2[1]	9,609	5,536	4,215	3,986									

[1] Preliminary. [2] Includes meal, groats, and durum. *Source: U.S. Bureau of the Census.* T.756

Supply and Distribution of Wheat Flour in the United States In Thousands of Cwt.

Year	Wheat Ground 1,000 Bu.	Milfeed Production 1,000 Tons	Flour Production[1]	Flour & Product Imports[2]	Total Supply	Exports		Domestic Disappearance	Total Population July 1 Millions	Per Capita Disappearance Pounds
			1,000 Cwt.			Flour	Products[2]			
1983	689,951	5,655	311,587	1,590	313,177	37,315	150	275,712	234.8	118
1984	675,271	5,426	299,832	2,005	301,837	19,933	160	281,744	237.0	119
1985	700,151	5,556	313,815	2,064	315,879	18,387	141	297,351	239.3	125
1986	737,537	5,799	326,316	2,226	328,542	25,842	123	302,577	241.6	126
1987	767,507	6,260	341,565	2,632	344,197	28,529	142	315,526	243.9	130
1988	769,699	6,163	344,154	2,696	346,850	28,169	182	318,499	245.1	130
1989	761,021	6,072	342,762	3,303	346,065	26,357	182	319,526	247.4	129
1990	797,589	6,255	359,639	3,572	363,211	18,380	273	344,558	250.0	138
1991	780,458	6,240	346,431	3,558	349,989	22,267	95	327,627	252.6	130

[1] Commercial production of wheat flour, whole wheat, industrial and durum flour and farina reported by Bureau of Census. [2] Imports and exports of macaroni products (flour equivalent). [3] Preliminary. *Source: Economics & Statistics Service, U.S.D.A.* T.753

Wheat and Flour—Price Relationships at Milling Centers (In Dollars)

Crop Year (June-May)	At Kansas City					At Minneapolis				
		Wholesale Price of					Wholesale Price of			
				Total Products					Total Products	
	Cost of Wheat to Produce 100 lb. Flour[1]	Bakery Flour Per 100 lb.[2]	By-Products Obtained 100 lb. Flour[3]	Actual	Over Cost of Wheat	Cost of Wheat to Produce 100 lb. Flour[1]	Bakery Flour Per 100 lb.[2]	By-Products Obtained 100 lb. Flour[3]	Actual	Over Cost of Wheat
1983–4	9.45	9.99	1.83	11.69	2.37	9.80	10.75	1.59	12.34	2.54
1984–5	8.96	9.78	1.32	11.09	2.13	9.27	10.84	1.01	11.85	2.58
1985–6	8.28	9.28	1.19	10.47	2.20	9.05	11.39	.90	12.29	3.25
1986–7	6.54	8.06	.84	8.90	2.36	7.00	9.22	.63	9.85	2.85
1987–8	7.15	7.96	1.14	9.10	1.95	7.18	9.39	.89	10.28	3.10
1988–9	9.62	10.21	1.68	11.89	2.27	9.94	10.39	1.62	12.01	2.06
1989–90	9.58	10.41	1.45	11.86	2.28	9.48	10.00	1.36	11.36	1.89
1990–1[4]	6.86	7.78	1.29	9.07	2.21	6.98	7.73	1.21	8.94	1.96
1991–2[4]										
June–Aug. '91	6.86	8.02	1.05	9.07	2.21	6.90	7.72	1.00	8.71	1.81
Sept. '91	7.62	8.70	1.13	9.83	2.22	7.32	8.40	1.07	9.47	2.15
Oct. '91	8.37	9.30	1.34	10.64	2.27	8.39	8.95	1.21	10.16	1.77

[1] Cost of 2.28 bushels. [2] Quoted as 95% patent at K.C. & standard patent at Minn., bulk basis. [3] Assumes 50–50 millfeed distribution between bran & shorts or middlings, bulk basis. [4] Preliminary. *Source: Economic Research Service, U.S.D.A.* T.751

Wool

Wool production worldwide was expected to fall by 7 percent in 1991/92 (July-June) to nearly 4 billion pounds. Much of the decline was attributed to Australia's lower output, which was pegged at 2 billion pounds, greasy, against 2.38 billion the previous season. The number of sheep shorn in Australia was expected to be 194 million, about 10 percent less than in 1991/92. Fleece weights were down because of reduced use of supplementary feed, in response to lower economic returns, and because of less rain. During the prior 1990/91 season, a suspension of the country's wool support program, a flock-reduction scheme, and higher wool taxes led to declines in the herd. Some Australian sheep producers turned to cultivating wheat since the wool market was depressed.

Wool production in New Zealand was slated to be 670 million pounds in 1991/92, little changed from the previous season. The South African clip was expected to decline by about 6 percent to 216 million pounds, reflecting the effects of a continuing drought.

World wool availability was forecast to be a record 5.5 billion pounds in 1991/92 and was up 1.5 percent from the prior season. About 52 percent of the available wool was merino, and the remainder were crossbred and carpet wools.

Demand for wool was sluggish at the beginning of the 1991/92 season, but picked up in October and November as buying by Japanese and Chinese mills increased. Chinese buying was stronger than anticipated. One negative was the absence of the former USSR in the market. Nonetheless, the demand outlook was much brighter than it had been in 1990/91, when the loss of Eastern European business and economic recessions in several key importing countries hurt wool sales overall.

In the U.S., wool production in calendar 1991 was put at 46 million pounds, clean content, and was slightly below the previous year's 47 million pounds. Estimated imports increased to 95 million pounds from a fairly weak level of 72 million in 1990. Chief suppliers to the U.S. included Australia, New Zealand, the U.K., Argentina, and Uruguay.

Domestic consumption of raw wool in 1991 was strong at 150 million pounds, against 133 million the previous year, and was the greatest in 20 years. Strong usage stemmed from brisk production of wool jackets, suits, and coating fabric. Wool usage by carpet mills expanded. Exports of wool by the U.S. were projected to be 4 million pounds, compared with 2.7 million in 1990 and the best in a number of years.

Futures Market

Greasy merino wool futures are traded on the Sydney Futures Exchange.

World Production of Wool[3] In Millions of Pounds (Clean)

Year	Argentina	Australia	China	New Zealand	South Africa	Uruguay	USSR	World Total
1983–4	214	1,014	214	597	134	123	481	3,651
1984–5	198	1,153	203	611	132	106	461	3,818
1985–6	201	1,177	196	584	121	130	443	3,803
1986–7	198	1,263	205	575	115	134	465	3,904
1987–8	207	1,310	231	573	119	134	456	3,995
1988–9[1]	216	1,380	245	562	126	126	474	4,116
1989–90[1]	196	1,594	262	516	130	141	476	4,325
1990–91	194	1,579	265	503	137	139	467	4,292

Source: Commonwealth Secretariat, Economic Affairs Division

Wool Goods[1] Production in the United States In Millions of Square Yards

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Year	Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Year
1984	48.6	44.3	29.7	36.7	159.4	1989	47.5	48.9	40.1	37.0	176.3
1985	40.6	39.5	24.3	34.0	138.3	1990	38.8	38.8	32.3	31.4	140.7
1986	37.7	38.8	27.3	30.2	134.1	1991[2]	38.1	48.3	41.3		

[1] Woolen and worsted woven goods, except woven felts. [2] Preliminary. *Source: Bureau of Census* T.763

Price Received by Farmers for Shorn Wool (Greasy Basis) in the U.S. In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
1988	84.8	109.0	140.0	153.0	166.0	161.0	134.0	122.0	113.0	123.0	119.0	116.0	138.0
1989	109.0	131.0	133.0	135.0	136.0	134.0	121.0	112.0	115.0	147.0	102.0	94.0	124.0
1990[2]	65.8	70.6	83.4	92.6	99.5	93.4	80.4	74.4	71.9	83.5	58.0	48.2	76.8
1991[2]	38.2	42.1	47.9	58.4	67.4	71.8	56.4	53.0	53.9	66.6	51.4		

[1] Weighted average. [2] Preliminary. *Source: Crop Reporting Board, U.S.D.A.* T.765

Salient Statistics of Wool in the United States

						Shorn Wool			Apparel Wool (Clean Content)				Duty Free	Mill Consumption	
Year	Sheep & Lambs Shorn[2] Ths.	Weight per Fleece Lbs.	Shorn Wool Production Ths. Lbs.	Price per Lb.	Value of Production Mil. $	Support $ Per Lb.	Payment Rate $ Per Lb.	Total Wool Production[4] Thousand Pounds	Domestic Prod. Thousand Pounds	Exports Domestic Wool Thousand Pounds	Dutiable Imports For Cons.[4] Thousand Pounds	Total New Supply[3] Thousand Pounds	Raw Imports for Cons. Thousand Pounds	Apparel Thousand Pounds	Carpet Thousand Pounds
1983	12,866	8.00	102,890	61.2	63.0	153	91.7	102,890	54,326	1,014	49,371	131,371	28,688	126,729	13,851
1984	12,322	7.77	95,670	79.5	75.9	165	85.5	95,670	50,514	488	63,271	144,202	30,905	128,982	13,088
1985	11,247	7.88	88,055	63.3	55.7	165	101.7	88,055	46,493	1,415	50,164	124,550	29,308	106,051	10,562
1986	10,827	7.82	84,372	66.8	56.3	178	111.2	84,372	44,548	788	66,090	140,751	30,901	126,768	9,960
1987	10,922	7.75	84,450	91.7	77.1	181	97.4	84,450	44,590	1,037	74,054	148,673	31,066	129,677	13,092
1988	11,531	7.76	89,482	138.0	125.0	178	29.0	89,482	47,246	1,247	72,324	142,740	24,418	117,069	15,633
1989[1]	11,307	7.89	89,157	124.0	110.4	177	42.7	89,157	47,075	1,159	77,003	152,856	29,937	120,534	14,122
1990[5]	11,200	7.90	88,300	76.8				90,000	51,000	2,000	55,000		24,000	120,622	12,124
1991[5]	11,100	7.80	86,600	61.7											

[1] Preliminary. [2] Includes sheep shorn at commercial feeding yards. [3] Production minus exports plus imports; stocks not taken into consideration. [4] Apparel wool includes all dutiable wool; carpet wool includes all duty-free wool. [5] Estimate. *Sources: Economics Service, U.S.D.A.; Dept. of Commerce*

T.766

Consumption of Apparel Wool in the United States In Millions of Pounds (Clean Basis)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	8.5	9.3	12.4	10.2	9.4	13.0	8.5	10.0	12.3	10.7	10.7	11.8	126.7
1984	10.6	12.0	14.0	11.3	11.9	13.0	8.2	9.9	11.2	8.5	8.9	9.4	129.0
1985	9.1	8.1	9.6	8.4	9.0	10.5	6.5	8.1	10.4	8.6	8.8	8.9	106.1
1986	11.9	10.6	10.0	12.7	10.2	10.8	11.3	9.4	9.4	11.1	9.3	10.1	126.8
1987	9.9	11.0	12.9	10.9	10.6	12.7	9.0	9.4	11.7	10.9	9.6	11.2	129.7
1988	9.1	9.2	12.6	9.3	8.7	12.1	9.1	8.8	9.5	9.2	8.3	11.2	117.1
1989	10.6	11.1	13.7	10.4	8.7	11.9	9.3	9.7	10.8	9.4	7.8	9.1	113.0
1990[1]		29.9			30.0			25.4			30.5		120.6
1991[1]		33.3			38.7			36.0					

[1] Preliminary. *Source: Bureau of the Census*

T.767

Average Wool Prices[1]—Australian—64's, Type 62, Duty Paid—U.S. Mills In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	273	271	266	266	262	262	260	262	263	271	270	266	266
1984	268	276	279	276	271	269	255	259	247	249	255	251	263
1985	246	233	236	227	234	229	230	226	224	224	217	222	229
1986	231	229	231	238	252	242	N.A.	229	224	230	240	250	236
1987	252	259	288	325	327	335	332	373	341	348	347	356	324
1988	391	468	496	564	564	513	489	467	461	488	472	475	487
1989	511	484	454	429	414	403	405	410	414	417	417	420	431
1990	417	404	403	414	406	342	338	352	355	343	332	332	370
1991	334	335	209	221	271	286	N.A.	248	229	215	274	270	263

[1] Raw, clean basis. *Source: U.S. Dept. of Agriculture*

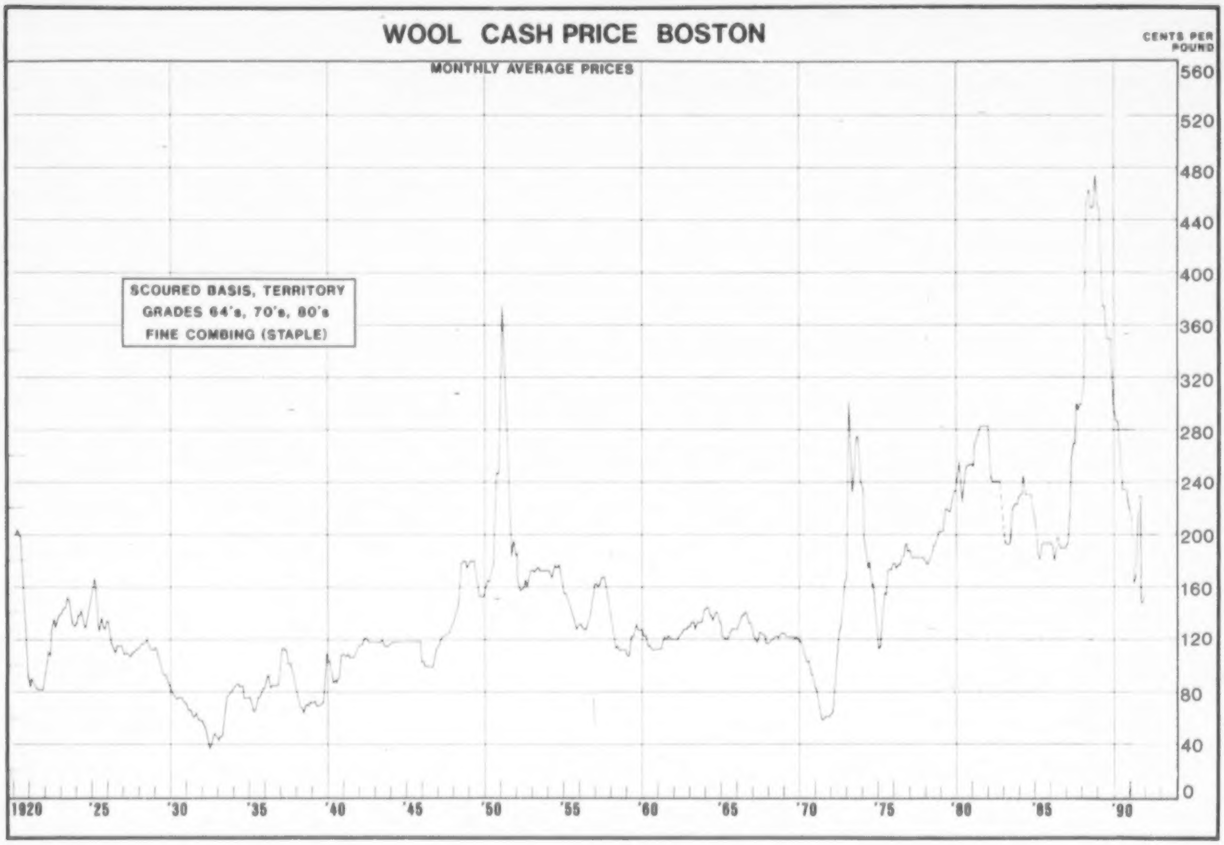
T.768

Average Wool Prices—Domestic[1]—Graded Territory, 64's, Staple 2¾" & Up—U.S. Mills ¢/Lb.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1983	—	—	193	193	193	198	219	223	225	225	225	228	212
1984	230	230	230	245	234	230	230	230	230	221	218	214	228
1985	205	195	185	182	191	193	193	193	193	193	193	193	192
1986	193	189	180	188	198	198	193	190	190	190	190	190	191
1987	193	202	216	260	270	270	270	300	295	300	300	300	265
1988	315	397	435	453	463	460	450	450	450	463	475	450	438
1989	450	438	410	375	375	365	350	350	350	350	333	300	370
1990	294	287	287	284	275	257	242	235	235	235	225	220	256
1991	217	210	163	167	203	230	230	167	156	148	148	155	183

[1] Raw, shorn, clean basis. *Source: U.S. Dept. of Agriculture*

T.769



Wool: Mill Consumption, by Grades in the U.S., Scoured Basis In Millions of Pounds

	Apparel Wool[1]							
	Woolen System			Worsted System				
Year	60's & Finer	50's Up to 60's	Total	60's & Finer	Coarser Than 60's	Total	All Total	Carpet Wool[2]
1983	30.5	30.2	60.7	42.4	23.6	66.0	126.7	13.9
1984	32.9	32.2	65.2	39.7	24.1	63.8	129.0	13.1
1985	28.0	27.7	55.7	33.6	16.7	50.3	106.1	10.6
1986	34.1	32.2	66.3	41.7	18.8	60.5	126.8	10.0
1987	32.4	28.6	61.0	53.8	14.8	68.7	129.7	13.1
1988	23.8	20.9	44.6	54.6	17.9	72.4	117.1	15.6
1989	24.1	21.8	45.9	56.1	18.5	74.6	120.5	14.1
1990[3]	26.2	24.9	51.1	50.6	18.9	69.5	120.6	12.1

[1] Domestic & duty-paid foreign. [2] Duty-free foreign. [3] Preliminary. [4] Estimate. *Source: Economic Research Service, U.S.D.A.* T.762

United States Imports[1] of Unmanufactured Wool (Clean Yield) In Millions of Pounds

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1983	6.0	6.2	5.0	6.7	4.9	7.5	6.5	5.8	5.1	8.5	8.0	8.9	78.1
1984	11.2	9.0	7.8	7.8	10.4	6.7	9.6	6.4	6.0	6.9	5.6	6.8	94.2
1985	10.7	5.8	6.0	5.7	7.1	4.9	7.3	4.5	6.9	7.1	5.5	8.0	79.5
1986	10.2	8.8	7.6	7.5	8.0	8.6	7.8	6.3	7.0	5.0	9.2	10.8	97.0
1987	8.6	8.2	9.5	8.7	13.4	8.9	8.6	8.4	6.7	7.0	8.2	9.0	105.1
1988	12.0	12.7	8.8	9.1	8.6	7.4	7.7	5.0	3.3	6.7	8.6	6.7	96.7
1989	8.7	11.3	9.0	13.1	10.3	8.3	10.0	6.9	3.9	10.4	5.1	9.8	106.9
1990[2]	7.3	9.2	4.7	8.2	5.0	4.8	3.4	5.5	5.0	6.9	7.5	4.2	71.7
1991[2]	10.7	6.9	5.4	5.5	7.3	8.1	9.2	7.0	4.4	7.8	5.1		

[1] Data are imports for consumption. [2] Preliminary. *Source: Department of Commerce* T.764

Zinc

Slow growth and lagging demand in the auto and construction sectors in the U.S. and Europe accounted for zinc's lower demand and soft prices during 1991. Starting the year at around 59 cents a pound, prices on the LME fell steadily through most of 1991, dropping to around 49 cents by year's end.

After a year of talk and expectations, the LME opened three warehouse facilities in the U.S. to hold exchange-certified stocks of zinc, lead, aluminum, tin and nickel. The new warehouses are in Louisville, Ky., Bridgeport, Ct. and Baltimore, Md. A fourth warehouse facility in Chicago was expected to be open in January 1992.

With a slowdown in demand, the new warehouses were expected to find zinc deliveries running at a brisk pace in 1992, with warehouse stocks showing a sharp increase. Since warehouse stocks as a component of visible supply are an important price indicator, zinc prices were likely to continue under pressure in 1992.

Domestic recoverable zinc mine production in the first eight months of 1991 totaled 353,489 tonnes, compared with full-year 1990's 515,355 tonnes. Slab zinc smelter production amounted to 232,263 tonnes in the same eight months, against full-1990's output of 365,760 tonnes. It was expected that both mine production and smelter output would show gains for full-year 1991 over 1990.

Consumption, however, was running at a slower pace during the same January-August period. Slab zinc consumption totaled 384,210 tonnes in the period, against full-year 1990's 617,576 tonnes. The next area of zinc offtake was copper-based scrap consumption, which totaled 88,000 tonnes in the period, versus 1990's 144,500 tonnes. This was followed by consumption of zinc-based scrap at 80,000 tonnes for the January through August period, in comparison to 1990's full-year offtake of 105,000 tonnes.

Production of zinc oxide, used in the manufacturing of animal feeds, agricultural chemicals, ceramics, paints, photocopying media, and other products, totaled 75,071 tonnes in the eight-month period, compared with 122,196 for all of 1990. Oxide imports totaled 20,771 tonnes, versus 1990's 49,454 tonnes. U.S. imports of zinc oxide come mostly from Canada and Mexico.

In October, the International Lead and Zinc Study Group met in Vienna for its annual meeting. The group forecast slightly lower global zinc mine production (excluding all countries in the former Communist Bloc, except Yugoslavia) for 1992. They estimated that 1991's zinc production totaled 5.446 million tonnes and that 1992's would be 5.443 million. Global consumption in 1991 was lower than 1990's 5.251 million tonnes, at 5.177 million tonnes, but 1992 was seen as a growth year with total offtake predicted to be 5.386 million tonnes.

Galvanizing is the largest area of usage for zinc, with total U.S. apparent consumption in sheets and strips for the first eight months of 1991 estimated at 215,100 tonnes, compared with full-year 1990's offtake of 376,400 tonnes.

Globally identified zinc resources totaled some 1.8 billion tonnes. Experts felt that zinc-bearing coals, found in the mid-continental U.S., had a resource potential of many millions of tonnes of zinc that could possibly be recovered as a byproduct of coal.

Futures Market

Zinc futures are traded on the London Metal Exchange (LME).

Salient Statistics of Zinc in the United States In Thousands of Metric Tons

Year	Net Import Reliance as a % of Apparent Consumption	Production of Slab Zinc						Slab Zinc Dec. 31 Stocks at				Consumption					
		Primary												Base Scrap[2]			
		Domestic	Foreign	Total	Value Mil. $[6]	Redistilled Secondary	Total Production	Producer Plants	Consumer Plants	Gov't Stockpile	Total All Stocks	Zinc Slab	Ores[2]	Zinc[3]	Copper	Aluminum[4]	Total
1986	73	191.1	62.3	253.4	170	62.9	316.3	19.9	54.2	340.6	100.7	999.0	19.2	141.8	131.4	.5	1,274
1987	71	205.3	56.1	261.0	120	82.6	343.9	16.6	57.1	340.6	96	1,052.0	2.5	157.8	145.2	.5	1,383
1988	69	196.5	44.8	241	324	88.5	329.8	6.4	64.8	340.6	86	1,089.0	2.4	97.3	156.0	.7	1,340
1989[1]	61	166.4	96.7	263	499	95.1	358.2	8.2	60.3	340.6	91	1,060.0	2.1	104.0	147.0	.7	1,314
1990[5]	41			262		96	360	11.4	42		88	991	2.5	105	145	.9	1,270
1991[5]	30			260		110				343	90	890					

[1] Preliminary. [2] Recoverable zinc content. [3] Excludes redistilled slab & zinc produced by remelting. [4] Aluminum & magnesium-base scrap. [5] Estimate. [6] Domestic ores (recoverable content). *Source: Bureau of Mines* T.770

Average Price of Zinc, Prime Western Slab (Delivered U.S. Basis) In Cents per Pound

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1987	43.33	41.38	41.38	41.38	44.15	46.92	48.00	48.00	44.87	43.38	44.10	45.38	44.36
1988	45.90	46.93	49.36	54.14	57.74	65.08	68.38	68.38	69.88	71.07	72.54	75.37	62.07
1989	81.58	89.01	95.38	87.76	85.38	81.06	80.38	83.26	81.88	80.31	76.57	73.38	83.00
1990	71.33	66.47	77.37	83.12	87.38	87.38	86.54	82.45	81.00	72.30	70.00	70.00	77.95
1991	70.00	64.53	62.00	62.00	62.00	62.00	62.00	N.Q.	N.Q.	50.44	54.85	59.22	60.90
1992	57.62												

Source: American Metal Market T.778

ZINC

World Smelter Production of Zinc In Thousands of Metric Tons

Year	Australia	Belgium	Canada	France	W. Germany	Italy	Japan	Mexico	Norway	Peru	Poland	Spain	USSR	United Kingdom[3]	United States	World Total
1985	293.2	290.5	692.4	247.2	366.9	210.1	739.6	181.9	92.7	163.1	180.0	213.3	990.0	74.3	333.8	6,785
1986	307.6	288.5	571.0	257.4	370.9	230.4	708.0	176.0	90.4	156.0	179.2	199.3	985.0	85.9	316.3	6,691
1987[1]	312.1	308.6	609.9	249.3	377.5	247.0	665.6	186.3	116.5	144.6	176.5	213.6	1,000	81.4	343.9	7,009
1988[1]	307.0	323.8	703.2	274.1	352.4	242.1	678.2	191.0	121.1	122.6	176.6	245.4	963.0	76.7	329.8	7,115
1989[2]	298.5	299.6	669.7	264.5	348.3	246.0	663.8	194.5	120.7	136.7	177.0	246.4	977.0	79.8	361.0	7,187

[1] Preliminary. [2] Estimated. [3] Some secondary metal included. *Source: Bureau of Mines* T.771

Consumption of Slab Zinc in the United States, by Industries and Grades In Thousands of Metric Tons

		By Industries							By Grades					
Year	Total	Galvanizers	Brass Products	Zinc-Base Alloy[2]	Rolled Zinc	Zinc Oxide	Light-Metal Alloys	Other	Special High Grade	High Grade	Contin.[5] Galvan. Grade	Contrd.[4] Lead Grade	Remelt	Prime Western
1985	770.7	362.4	77.9	218.4	48.0	44.4	15.2	4.3	420.6	87.4	37.1	39.3	5.5	174.8
1986	706.0	366.0	73.7	175.1	28.6	40.1	13.0	9.6	353.4	89.1	35.0	37.3	9.0	182.0
1987	798.1	404.7	84.4	178.7	35.4	64.4	—30.6—		415.3	100.0	53.8	39.3	8.6	171.7
1988[3]	833.5	398.8	91.0	205.6		61.4	—76.7—		412.4	104.2	—93.9—			221.9
1989[1]	887.2	444.6	95.8	189.7		70.4	—86.7—							
1990[1]	700													

[1] Estimated. [2] Die casters. [3] Preliminary. [4] Controlled. [5] Continuous. *Source: Bureau of Mines* T.773

Zinc Foreign Trade of the United States In Metric Tons

	Imported for Consumption							Zinc Ore & Manufactures Exported						
								Blocks, Pigs, Anodes, etc.		Wrought & Alloys				
Year	Ores[1]	Blocks, Pigs, Slabs	Zinc Fume	Waste & Scrap	Dross, & Skimmings	Dust, Powder & Flakes	Total Value Thous. $	Unwrought	Unwrought Alloys	Sheets, Plates & Strips	Angles Bars, Rods, etc.	Waste & Scrap	Dust (Blue Powder)	Zinc Ore & Concentrates
1985	90,186	610,900	—	3,247	4,942	8,681	559,434	1,011	1,243	776	1,434	43,947	2,037	23,264
1986	75,786	665,126	11	4,521	6,087	7,446	522,473	1,938	1,610	721	1,531	68,660	1,551	3,269
1987	46,000	705,985	16	4,025	6,711	7,001	608,256	1,082	5,825	1,732	1,271	88,277	1,927	16,921
1988	61,000	749,133		5,727	6,346	7,652	884,524	482	5,748	3,814	2,016	103,732	2,221	33,590
1989[2]	41,000	711,554		9,367	9,031	7,253	1,241,659	5,532	2,423	16,515	2,653	108,086	8,137	78,877
1990[3]	47,000	650,000		30,000	7,000	8,000						110,000	9,000	220,000
1991	45,000													250,000

[1] Zinc content. [2] Preliminary. [3] Estimate. *Source: Bureau of Mines* T.774

U.S. Mine Production of Recoverable Zinc In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	20.5	22.7	24.5	18.6	19.7	19.4	14.4	14.8	15.5	19.9	17.0	19.6	226.5
1986	20.6	18.6	19.8	15.5	12.4	14.4	16.7	15.5	16.7	19.6	15.4	17.9	203.0
1987	17.8	17.8	19.0	18.0	17.8	18.1	17.8	19.1	18.5	18.5	16.1	18.5	216.3
1988	16.8	18.2	22.3	21.9	22.0	22.4	18.8	21.5	19.9	19.9	19.9	19.3	244.3
1989	22.2	20.8	22.9	22.4	23.4	24.3	20.8	25.3	23.1	25.1	22.8	20.9	275.9
1990[1]	26.9	24.8	26.4	26.2	27.9	45.6	50.7	57.1	44.7	42.7	40.4	43.6	515.4
1991[1]	45.5	41.9	43.8	45.5	49.4	36.9	43.0	47.4	49.5	39.1			

[1] Preliminary. *Source: Bureau of Mines* T.774A

U.S. Consumption of Slab Zinc by Fabricators In Thousands of Metric Tons

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1985	65.3	64.4	62.8	61.0	66.0	59.0	52.6	55.9	56.8	58.9	55.8	52.1	711.8
1986	91.8	84.6	84.9	86.0	89.5	78.2	82.0	70.0	87.8	71.0	77.3	74.3	999.0
1987	66.2	78.9	101.0	87.0	81.2	86.9	87.2	98.3	93.0	96.1	95.5	84.4	1,052.0
1988	79.5	76.4	110.3	97.9	110.7	84.6	73.9	111.8	100.0	97.5	87.2	88.1	1,089.0
1989	90.0	81.4	96.0	81.6	97.0	82.1	76.1	101.2	81.2	92.0	92.7	78.0	1,060.0
1990[1]	82.4	79.2	88.0	74.0	79.4	91.0	102.8	100.0	73.0	86.0	73.0	67.1	991.0
1991[1]	80.0	69.0	65.9	67.8	68.3	68.8	73.6	78.0	79.3	80.0			

[1] Preliminary. *Source: Bureau of Mines* T.774B